Infantry School Quarterly

Formerly
The Mailing List

Published by
The Infantry School
Fort Benning, Ga.

October 1947
Vol. XXXI No. 2

INFANTRY SCHOOL QUARTERLY

A compilation of instructional matter prepared at The Infantry School and published quarterly

Containing the Latest Thought on Infantry

Volume XXXI, Number 2

Prepared by the Academic Department of The Infantry School by direction of Major General John W. O'Daniel, Commandant, and under the supervision of Brigadier General W. P. Shepard, Assistant Commandant

DISTRIBUTED BY THE BOOK DEPARTMENT
THE INFANTRY SCHOOL, FORT BENNING, GEORGIA

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The printing and binding was accomplished by the enlisted personnel of the Army Field Printing Plant, Fort Benning, Georgia.

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Published in January, April, July, and October by The Infantry School, Fort Benning, Ga. Applications for subscription must state military status of the applicant, be accompanied by check or money order for $2.50 (for four issues), and be addressed to the Book Department, The Infantry School, Fort Benning, Ga.

16111 FT. BENNING, GA. 21 JULY 47 2500

Conduct of the Defense of Extended Frontages

Do you find that the principles as set forth in Field Manuals and as taught at The Infantry School are sound and workable in every respect in actual combat? During World War II this question, framed in a dozen ways, was one of the first asked by Army Ground Forces observers of infantry commanders in all theatres of operations. Replies were varied—and at times colorful. At one extreme was the opinion expressed as an unqualified and emphatic "Yes, Sir!" At the opposite extreme were such answers as "Hell, no! I've had to throw out everything I was ever taught and then figure out my own solution for every problem I've been faced with. The books never even mentioned the kind of situation I'm running into every day here."

Of these two diametrically opposed views, neither—as might be expected—was ever shared by more than a small fraction of infantrymen. The majority of those interrogated—and it was an impressive majority— expressed themselves somewhat as follows: "Yes, accepted doctrine and principles *are* basically sound and workable. Most of the time, whether or not we are aware of it, we get things done just about as the teachings tell us they should be done. Of course, we do meet situations where we can't follow the teachings in every detail, and others where, at first glance, the principles we have been taught seem to be of no help at all. Even in these cases the decisions and solutions we come up with are not born of inspiration or fashioned on the spot; rather, they represent a modification and an adaptation of the basic principles. In other words, there is nothing wrong with the principles and there are few, if any, situations where they don't generally hold true. When applying them in any given situation it is merely a matter of adjusting and

adapting them to meet the particular features of that situation."

Such, then, was the question and such the range of the answers. Of the multitude of specific topics to which the question was and is pertinent, perhaps none—at least in the field of tactics—comes more readily or more commonly to mind than the subject of this article—the organization of a defensive sector on an extended frontage.

Rare indeed was the unit in the past war that did not at some time or other find itself assigned to defend a sector far in excess of that considered normal. In fact, so common was this condition that some units came to regard as normal the so-called extended or "abnormal" frontage. Nor was this condition peculiar to any one army, year, or theatre. Almost any after-action report or unit history affords at least one example; two reports drawn from the files at random illustrate this point.

> * * * A feature of the Tunisian campaign has been the widely extended frontages that infantrymen have been called upon to defend. It has not been uncommon for an infantry division to be responsible for defense on a front of up to 40 miles and infantry battalions of up to 7 miles. * * * it may well be that in the future * * * [events] will compel the distribution of the available troops over frontages just as great. This means there is a strong possibility that defensive positions wider than those for which we normally train may at times become the rule rather than the exception.
>
> * * * after heavy fighting in the Hurtgen Forest, the U. S. 4th Infantry Division, with strengths of regiments down to 70-75 percent effective, and rifle companies down to 50-60 percent effective, was assigned a frontage of 35 miles on a relatively quiet front.

Recognizing the frequency with which such frontages were assigned to units during the past war, The Infantry School augmented its program of instruction by adding the subject "Organization and Conduct of Defense of a Regimental Sector on an Extended Frontage." Reduced to its simplest terms, of course, this subject has one major objective—namely, to furnish answers to the question "To what extent and in what manner does the assignment of an extended frontage justify or necessitate a sacrifice or modification of fundamental defensive principles?"

Before a solution to this broad problem could be found, it was essential that a very pertinent point be clarified; namely, "What *is* an extended frontage?" Paragraph 237g of FM 7-40 states in part:

> The frontage of an interior infantry regiment having two battalions available to garrison its battle position and one to use as reserve, may be as little as 2,000 yards in broken, heavily wooded terrain, and as much as 5,000 yards in flat, open terrain. In partially open, rolling terrain the regiment is usually assigned a frontage of from 3,000 to 4,000 yards.

From this it might be concluded that an extended frontage for an infantry regiment is anything in excess of 5,000 yards. At the other extreme, we find the examples from World War II quoted above—7 miles for an infantry battalion and 40 miles for a division.

Between these two extremes—5000 yards and 13 to 20 miles (one-third to one-half of 40 miles)—there is a considerable difference. Obviously no single set of principles could be evolved which would govern the organization of both an extended frontage of 6,000—8,000 yards and one of 13-20 miles. Of these two examples of an extended frontage, it is further apparent and generally recognized that the latter permits little or no application of the recognized principles for the organization of a defensive sector. The organization of a sector with such a frontage—which, perhaps, might more aptly be referred to as an extended, extended front—must take the form of a screening action. Certainly it could not be considered an *organized defensive position* in the military sense.

If, then, it is agreed that sectors in excess of 10 miles in width are associated with a screening action rather than an organized defensive position, the concept of an extended frontage is clarified. It becomes, in effect, a sector in excess of the 5,000 yards which is considered the normal maximum, but not so great as to make fantastic an attempt to see wherein and how, if at all, the normal principles can be applied. It is with such a sector—5,000 to 10,000 yards—that this study of extended frontages is concerned.

First, what is the basic doctrine of defense? What are the so-called normal principles governing the organization of a defensive position? FM 7-40 states:

> Defensive doctrine contemplates the organization of a battle position to be held at all costs and the use of covering forces to delay and disorganize the advance of the enemy and to deceive him as to the true location of the battle position. The infantry mission in defense is, with the support of the other arms, to stop the enemy by fire in front of the battle position, to repel his assault by close combat if he reaches it, and to eject him by counterattack if he succeeds in entering it. * * * Counterattack is the decisive element of the defense.

To implement this doctrine and to give maximum assurance of the successful accomplishment of this mission, innumerable principles are set forth. Certain of these are basic and comprehensive; present infantry teachings stress the following seven:

Defense of key terrain
Mutual support
Organization in depth
All-around defense
Coordinated fire plan
Coordinated antitank defense
Flexibility

These are familiar and need little detailed amplification. Chart 1 illustrates their application schematically in a battalion defense area. To understand their application on the regimental level, visualize a battalion adjacent to the one shown, and organized in similar fashion, and another battalion in reserve organized in accordance with the same principles indicated schematically for the employment of the reserve company. Finally, a few of the accepted figures pertinent to this so-called normal organization of a defensive sector will prove helpful. It cannot be overemphasized that these figures are merely a guide.

Frontage of a front-line rifle company area	550-1000 yards
Frontage of a front-line infantry battalion area	1200-2300 yards
Depth of a front-line rifle company area	400-700 yards

Depth of a front-line infantry battalion area ..... 800-1400 yards
Depth of a front-line regimental sector ..... 1500-2000 yards
Distance between the MLR and combat outpost line (maximum) ..... 2000 yards

When these principles are studied in the light of their application to an extended frontage—to repeat, when the question is asked "To what extent and in what manner does the assignment of an extended frontage justify or necessitate a sacrifice or modification of fundamental defensive principles?"—a divergence of views is noted. For example, this opinion was expressed in April, 1938:

> * * * this added width is taken care of by increasing the number of combat groups on the main line thereby decreasing the depth of the defense. Thus, the defense becomes more rigid and control is not such an important factor. Under such conditions a battalion may be given a sector of from 2,400 to 3,500 yards in width.

Paragraph 234 of FM 7-20 states:

> When the battalion is assigned a frontage of such width that mutual support between front-line units would be impracticable if one defensive position were organized in the normal manner, flexibility in defense is essential. * * * The frontage of the battalion is * * * divided between two rifle companies, each of which covers its frontage with a series of outguards and holds the bulk of its strength mobile in a concealed assembly area. The reserve company is similarly held mobile.

A publication of the British War Office dated October, 1943 had this to say:

> When a formation has to defend a wide gateway, it is essential that the available forces not be widely dispersed in an attempt to garrison the whole area. The principle must be to hold the key locality or localities with strong forces of all arms with all-around defense in depth, organized and provisioned to hold out for several days or even weeks. * * * * * Reserves for counterattack should be held sufficiently far back to allow them to retain their power of maneuver. The fighting in Tunisia has proved once again that a counterattack cannot effectively and quickly be delivered by troops that are already involved in the battle. * * * * * It is noteworthy that the same doctrine of defense is accepted in the German army, and that in North Africa the enemy seldom

> kept less than 50 percent of his available force in reserve for counterattack. He was also quick to appreciate what was dominating ground, and refused to be drawn into dispersing his strength by holding any but the key positions. * * *

Substantially, these views fall in the same three categories as the answers submitted to the general question asked by the Army Ground Forces observers and described at the beginning of this article, to wit:

1. The principles can be followed exactly and without exception.
2. They can be applied with minor modifications.
3. It is impossible to follow these principles in organizing and defending a sector with an extended frontage.

Here also, the weight of considered opinion rests with the the second category.

Any attempt to analyze and crystalize the thoughts of the majority who fall in the second category reveals at the outset one fundamental condition—they must be treated in broad, general terms. It is possible to indicate general policies—to erect guideposts—as to the nature and extent of modifications necessitated by the assignment of an extended frontage. *It is impossible, however, to reach definite conclusions relative to specific measures to implement these general policies in all situations.* This is necessarily true because of variations in such factors as terrain, weather, enemy capabilities and intentions, and strength and composition of the force available to organize the defensive sector.

If it will be accepted that there is sufficient justification for this seemingly evasive unwillingness to give definite, detailed solutions for each specific situation, it is logical to consider at this point the two fundamental conclusions of the "apply with modifications" adherents. Briefly stated these are as follows:

1. *No* general principle of defense is completely sacrificed. *All* are as valid in the organization of a battle position on an extended frontage as on a normal frontage.

2. In the application of certain of the principles, some degree of modification is inevitable. In other words, although the unit organizing the position must be guided by

the principles of defense, in certain respects it will be unable to approach the ideal as closely as would be possible on a normal frontage. Frequently, a choice must be made as to which of several principles will be thus modified. The decision, of course, depends on the variables listed below. Many of these modifications or adaptations are expressed in such terms as "more emphasis needed on .....", "more essential that .....", or "a greater necessity of ....." This is to be expected, for the extended frontage, rather than creating totally new and different problems, increases the problems already inherent in the organization of a defensive position on a normal frontage. It follows, therefore, that the extended frontage calls not for a new set of principles and guide rules, but for an intelligent application of the existing principles.

With these two conclusions as its foundation, the thesis that the principles can be applied with modifications can best be developed by considering the conclusions as they relate to the mission of the security echelon and organization of the battle position.

APPLICATION OF PRINCIPLES

1. SECURITY ECHELON. It is essential that knowledge of the enemy's strength, dispositions, and actions be obtained prior to his making contact with the MLR. To gain this information, as well as to provide security for the battle position and delay and deceive the enemy, the security echelon assumes a more aggressive and important role. This requires that:

a. The combat outpost force be stronger, particularly in attached and supporting weapons. A larger percentage of high angle fire weapons should be located initially where they can support the combat outpost by fire.

b. More aggressive and numerous intelligence missions be carried out including patrols and ground and air observation. Increased use of the intelligence and reconnaissance platoon and liaison planes is indicated.

c. Fires delivered by, or in support of, the combat outpost be delivered in greater mass and at longer ranges.

2. BATTLE POSITION. *a. Organization of key terrain.*

In the organization of a defensive position on an extended frontage, this principle is of paramount importance; other principles are considered in the light of their relationship to it. It places emphasis on the organization and occupation of key terrain features throughout the width and depth of the battle position by strong, balanced, self-sustaining units. This represents a de-emphasis of the concept of "line defense"; it does not mean, however, a defense based on independent, widely scattered "islands of resistance." A compromise between these two extremes is contemplated— a compromise dictated by the extended frontage. It is not desirable to organize the MLR thinly or similar to an OPLR. To do so would facilitate a penetration by the enemy at any point he might choose. Neither is it advisable to attempt to organize the entire MLR in strength. To do this would necessitate the employment in the forward areas of all or most of the available forces. This would mean sacrificing depth, all-around defense, and flexibility. Emphasizing the organization of key terrain features visualizes the following:

(1) Key terrain features organized in strength with the rest of the MLR held relatively lightly.

(2) Each unit organizing a key feature to be so disposed on the ground, stocked with essential supplies of all classes, and composed of elements and weapons of such varied types as to be a self-sustaining, powerful, fighting force capable of continued effective resistance even when by-passed. This approaches the concept of "islands of resistance."

(3) Greater intervals between the organized areas (key features). (See *Mutual support* below for methods of covering these intervals.)

(4) Greater attention to:

(a) Clearing fields of fire.

(b) Constructing dummy positions.

(c) Providing supplementary positions.

(d) Erecting camouflage and concealment.

(e) Emplacing obstacles, mines, and flares.

(f) Constructing emplacements.

(g) Locating routes for supply and movement of troops and weapons.

The organization of a sector in accordance with the above emphasizes the battalion as the basic, self-sustaining, fighting unit. At times, a battalion will occupy a single critical terrain feature. In other situations, the battalion will organize a tactical locality with each of the several terrain features therein occupied by a subordinate unit. In either case, it is the battalion which is the basic unit.

b. Mutual support. Because of greater intervals between units, there is less possibility of attaining the desired ideal in mutual support—i.e., continuous across the entire front and from front to rear. This does not necessitate a sacrifice of the principle; rather it requires modifications designed to insure the maximum mutual support possible. Such modifications should be made in the mutual support *between* key features—not between the elements *on* a key feature. They include:

(1) Organization and improvement of the position on a key terrain feature (particularly of supplementary positions) in such a manner as to permit firing into the flanks and rear of any enemy force attempting to surround or bypass an adjacent unit. It is desirable to have each gap where an enemy might penetrate covered from at least two terrain features in order to compensate for the probable inability to place accurate small-arms and machine-gun fire up to or in front of adjacent units.

(2) Greater reliance on high angle fires, mines, and obstacles to cover the intervals. This requires particular attention to the detailed preparation and careful coordination of the plans for these fires and the plans for rapid shifting and concentration in any area.

(3) Aggressive patrolling, establishment of listening posts, and exchange of information between units organizing adjacent terrain features.

c. Depth. The disposition of troops and weapons in depth depends largely on the location and nature of the key terrain features. Where most of these features are on or close to the MLR, a larger proportion of the available force will be needed on the MLR to organize these features. Where these

features are distributed through the sector, a larger proportion of the force will be utilized to furnish depth. In either case the following apply:

(1) Increased importance must be attached to organizing the rear positions on key terrain features.

(2) Reserve units must prepare more positions in order to provide effective resistance against attacks from any direction. Each position should be similar to those described under par *a* above.

(3) The depth of a regimental sector increases proportionally as the frontage increases. Thus, reserves and reserve positions are likely to be located at a greater distance from the MLR.

(4) Supporting weapons are likely to be emplaced farther to the rear to avoid displacement and to permit coverage of a greater sector of the front by each weapon.

d. All-around defense. Because of the wider intervals and resultant greater possibility of penetration or infiltration by the enemy, less reliance can be placed on adjacent units preventing attack against the flanks or rear of a tactical locality. The necessity for each tactical locality to be prepared for all-around defense must, therefore, be stressed. Measures which are designed to permit this effective defense against attack from any direction and which should be emphasized include—

(1) Careful preparation of the antimechanized defense plan. The extent of the intervals between organized terrain features increases the possibility of the enemy utilizing mechanized elements to make or exploit penetrations.

(2) Preparation of supplementary positions for all units.

(3) Utilization of aggressive patrols (including greater use of the I&R Platoon).

(4) Constant ground and air observation.

(5) Construction of obstacles and laying mines.

(6) Preparation of plans for the use of flares for warning and signal devices as well as illumination.

(7) Coordination to effect exchange of information between units.

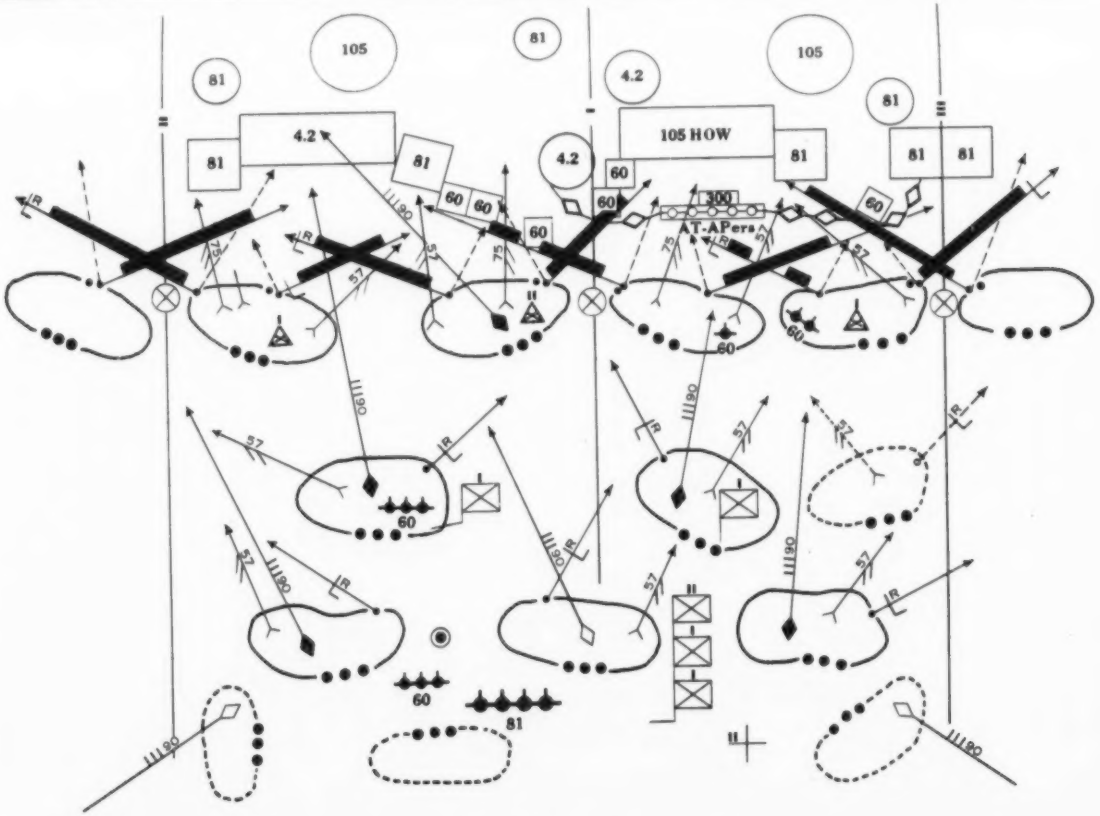


Figure 1. Schematic diagram.

e. Coordinated fire plan. There is considerably less likelihood that final protective fires covering the entire front can be planned or that supporting weapons can be assigned relatively small sectors in which to plan their concentrations. Therefore, in order to cover the extended frontage with a coordinated fire plan, supporting weapons must have the maximum flexibility in order to shift and mass fires quickly in any given area. To accomplish this, the following measures are emphasized:

(1) Careful and minute preparation and coordination of fire plans.

(2) More concentrations planned for high angle fire weapons.

(3) Priority of planned final protective fires and concentrations to areas in and forward of the gaps which are not covered by direct fire weapons.

(4) In selecting firing positions, greater probability of siting direct fire weapons singly rather than by pair and attaching increased weight to sectors of fire.

(5) Providing more supplementary means of communication because of the greater possibility of communication being disrupted.

f. Coordinated antitank defense. Conclusions reached in *a*, *c*, and *e* above relative to the disposition of troops and planning of fires apply as well to the organization of the antitank defense.

(1) Antitank weapons will be distributed among the units organizing key terrain features in accordance with the relative danger of the mechanized approaches.

(2) Since the antitank weapons available cannot cover the entire sector, greater stress will be placed on siting them singly, in depth, and where they cover the most dangerous avenues, and preparing several supplementary positions, with detailed plans for movement thereto, for each.

(3) Maximum employment of mines and obstacles is required.

g. Flexibility. Just as key terrain is the paramount principle in the *organization* of a position on an extended front-

age, so flexibility is the major factor in the conduct of the defense of such a position. It is vital that flexibility—both of fires and troops—be attained to the maximum degree possible. The sound application of many of the conclusions reached in the paragraphs above (i.e., preparation of many supplementary and reserve positions, plans for massing fires, etc.) will contribute greatly to the desired flexibility. The following points also warrant emphasis:

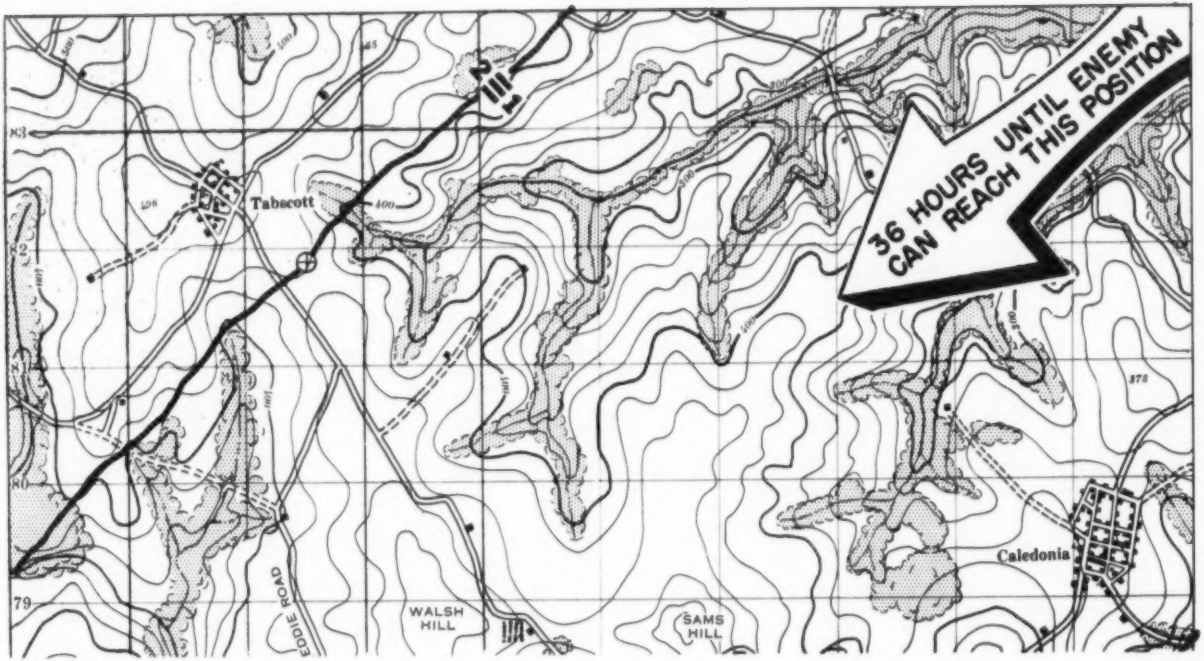
(1) Mobile reserves are more important on regimental and higher levels. If some sacrifice of mobile reserves must be made, it should be within the subordinate units (companies and battalions).

(2) Plans of the reserve for counterattack or movement to other positions must be more numerous, prepared and coordinated in minute detail with maximum use of motor transport, and executed with speed.

(3) There exists greater justification for keeping tanks in reserve to permit maximum utilization of their mobility and shock action in counterattacks.

(4) There is a greater probability of reserves initially occupying the rear position(s) considered most critical, and being prepared to move from there to execute counterattacks or to occupy other positions threatened by the enemy. This is particularly true where the nature of the terrain is favorable for a sudden and deep penetration by the enemy.

Before outlining these broad conclusions, it was stated that they would do no more than indicate general policies—serve as guideposts. Justification for such broad generalizations was claimed on the grounds that it is impossible to reach definite conclusions relative to specific measures to implement these general policies in all situations. Though this claim is reasonable in itself, it does not justify limiting the study of the problem solely to the generalizations. As the proof of the pudding lies in the eating, so the merit of any broad general statement is measured by its application to specific examples. Our conclusions are no exception; they must be tested in a variety of specific situations "on the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SAMS HILL
EDGE ROAD
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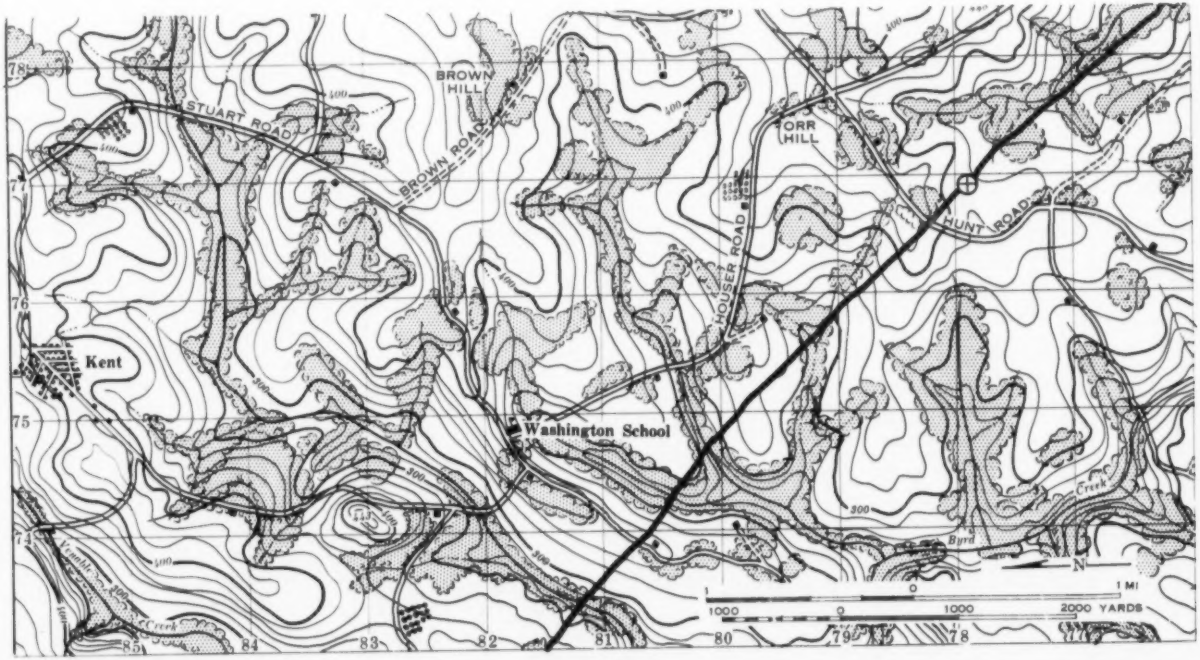


Situation Map 1.

ground." The balance of this article deals with the application of the generalizations in one such specific situation on one particular sector of terrain.

SITUATION

a. 1st Inf, part of a larger force, is ordered to organize and defend the sector shown on Situation Map 1.

b. Information known to CO 1st Inf at the time of receipt of this order includes the following:

(1) *Boundaries and limiting points*—see Situation Map 1.

(2) *Supporting units*—1st FA Bn and Co A 1st Engr Bn in direct support of 1st Inf.

(3) Division reserve—3d Inf, reinforced, is in division reserve. It will assemble six to seven miles northwest of TABSCOTT (82-84) and be prepared to move on order and by motor to forward assembly areas and counterattack against an enemy penetration in any portion of 1st Div sector.

(4) *Enemy*—Minimum of 36 hours available before enemy to southeast can reach the battle position. Enemy force contains foot and armored elements.

(5) *Terrain*—Ground is firm, generally open and rolling, especially in forward portions. Rear portion more broken with steeper slopes and deeper and more heavily wooded draws. Open areas are either under cultivation or covered with grass approximately 6 to 12 inches in height. Excellent for cross-country vehicular movement.

(6) *Woods*—Coniferous, thinly wooded, and relatively free of underbrush. Trees average 30 to 40 feet in height. These wooded areas afford good concealment for troop movement and assembly areas. They constitute a hindrance but not a barrier to mechanized movement. Visibility within the woods is good up to 150 yards.

(7) *Creeks*—Swollen and rapid, fordable with difficulty by foot troops, and, except in the portions indicated as intermittent, impassable to vehicular traffic.

(8) *Roads and bridges*—Roads are hard-surfaced, in excellent condition, and passable to all wheeled and tracked vehicles. All bridges are intact.

REQUIREMENT

What are the major elements of the plans of CO 1st Inf for the organization of the defensive sector? Consider the following, showing pertinent locations on Situation Map 1:

a. Organization of the MLR to include:

(1) Boundary(ies) between front-line rifle battalions and the limiting point(s) thereon.

(2) Rifle company defense areas of the front-line battalions.

b. Regimental reserve to include:

(1) Elements initially constituting the regimental reserve.

(2) Company positions to be prepared—whether or not to be initially occupied.

(3) Assembly area(s)—if any.

(4) Three most critical areas subject to penetration by the enemy for which counterattack plans will be prepared by the reserve.

c. Combat outpost line to include:

(1) Composition.

(2) Location.

d. Employment (directed or requested) of:

(1) Tank company.

(2) Mortar company.

(3) 1st Field Artillery Battalion.

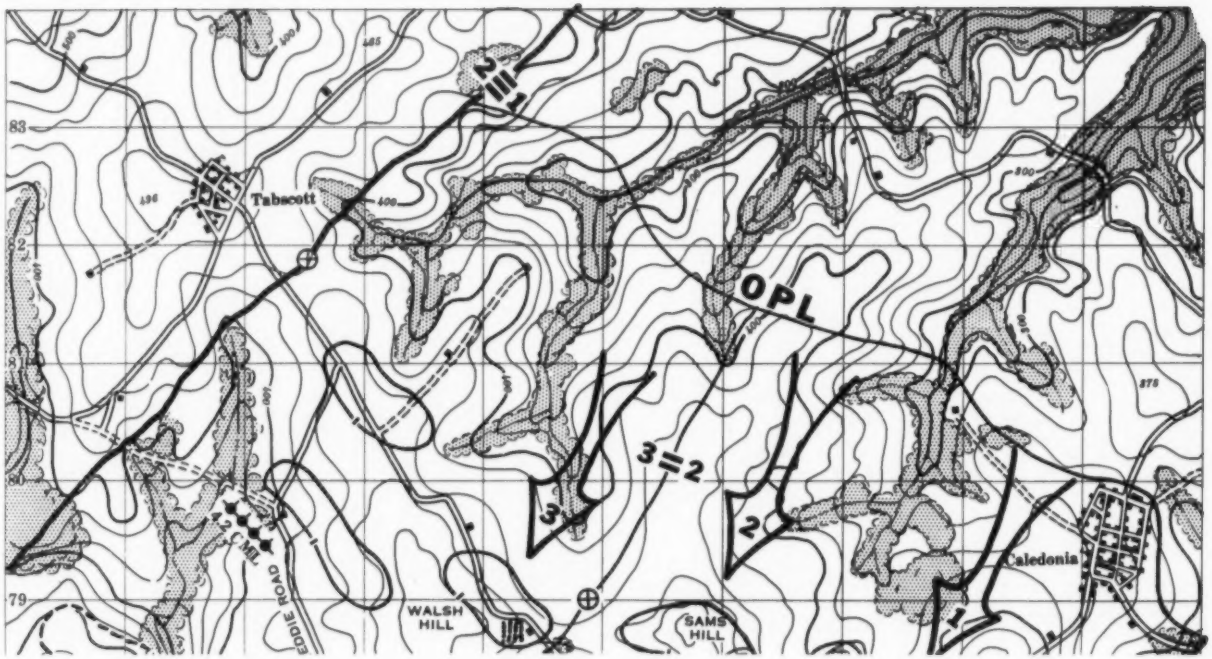
(4) Co A 1st Engineer (C) Battalion

SOLUTION

Pertinent portions of the plans outlined below are indicated on Situation Map 2. These include the rifle company defense areas of the front-line battalions. Although he does not normally designate these in his orders, the regimental commander must mentally visualize them as he makes his terrain analysis and assigns defensive areas to battalions.

a. Battalions on the MLR. Two battalions are to organize the MLR. One rifle company, reinforced, of the reserve battalion is attached to the right front-line battalion.

b. Regimental reserve. One infantry battalion (less one rifle company reinforced), with two tank platoons attached, constitutes the reserve. The battalion is to prepare positions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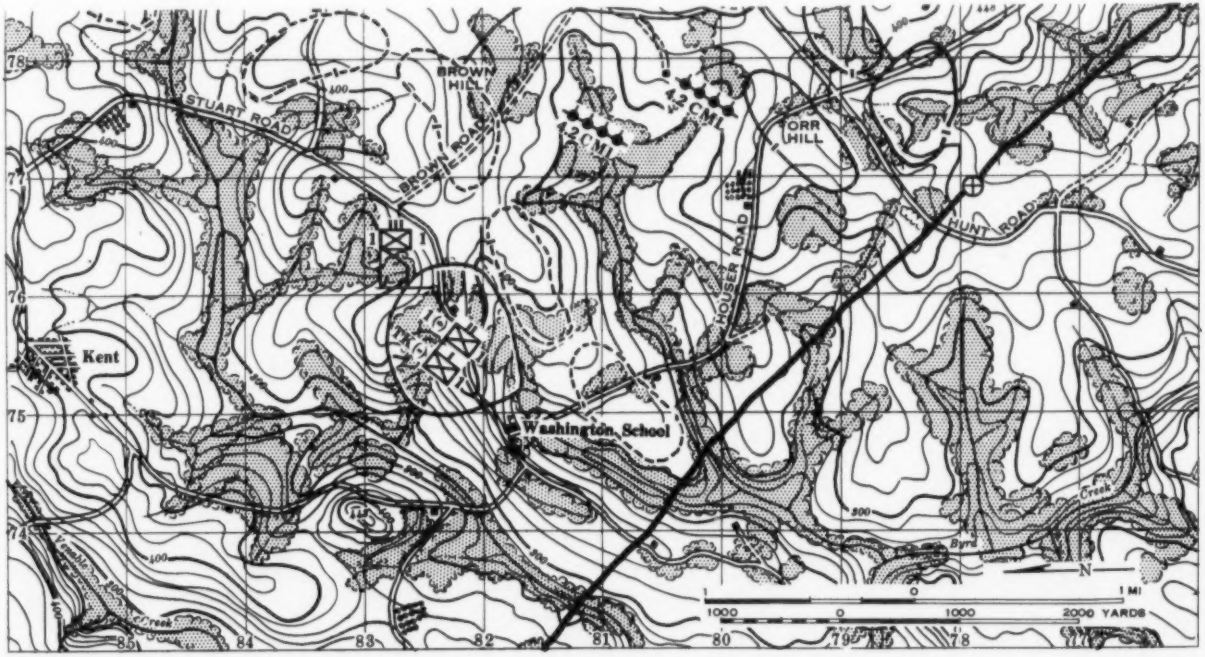


Situation Map 2.

in the rear portion of the regimental sector and prepare counterattack plans for penetrations 1, 2, and 3 (see Map 2). Upon completion of initial positions and other assigned tasks, the battalion is to remain in the designated assembly area prepared to counterattack or to occupy prepared positions on order.

c. Combat outpost line. The reserve battalion will organize the combat outpost with a maximum of one rifle company, reinforced. For location, see Situation Map 2.

d. Tank company. One platoon is attached to each front-line battalion to reinforce the antimechanized defense of the battalion areas. All tanks of these platoons are to be emplaced well forward with priority to covering the most dangerous mechanized approaches forward and to the flanks of the MLR. Supplementary positions are to be prepared for each tank and to be so selected as to insure adequate all-around antimechanized defense for each organized tactical locality. The remaining two platoons which are attached to the reserve battalion, are to prepare and occupy direct firing positions in the rear portion of the regimental sector with priority to covering HOUSER ROAD and BROWN ROAD. These positions are to be coordinated with positions of the forward tank platoons and with the prepared positions of the reserve battalion. One of these rear platoons is initially attached to the combat outpost until withdrawal of that force is completed.

e. Mortar company. Initially a minimum of one platoon will be emplaced well forward to support the combat outpost; subsequent to withdrawal of the combat outpost, one platoon will be in direct support of each front-line battalion and one in general support with priority of fires to the right battalion. In the event of a counterattack, priority of fires of all platoons will be to support the counterattacking force.

f. Field artillery battalion (105-mm). 1st FA Bn initially to support the combat outpost; subsequently will be in general support of 1st Inf. Two normal barrages allotted to the right front-line battalion and one to the left front-line battalion. In the event of a counterattack, priority of fires will be to support the counterattacking force.

g. Engineer company. Co A, 1st Engr Bn is to perform normal engineering duties with priority as follows:

(1) Lay mine fields and construct obstacles forward of the MLR (first priority to HOUSER ROAD and vicinity; second priority to approaches from TABSCOTT (82-84).)

(2) Prepare and/or improve routes to be used by reserves for movement to prepared positions or to counterattack. Coordinate with commanding officer, reserve battalion.

(3) Prepare additional routes across streams to supplement bridges at (75-80), (77-83), and (77-84).

(4) Assist in construction of firing positions for the larger weapons.

(5) Assist front-line units in erection of wire entanglements and construction of emplacements.

DISCUSSION

a. Organization of the MLR. (1) The area is divided approximately in half. Since the right portion of the sector is more critical and somewhat more difficult to defend, it would be desirable to assign a wider frontage to the left battalion than to the right. This, however, would necessitate dividing the responsibility for the ridge at (79-80), SAMS HILL and/or BROWN ROAD, or assigning these terrain features entirely to the left battalion. To divide the responsibility is clearly unsound; to adopt the latter alternative would be to make the left battalion responsible for over 5000 yards—an equally unsound solution.

(2) To allot front-line areas to all three battalions would permit a stronger organization of the MLR but would necessitate a considerable, if not complete, sacrifice of depth in the regimental sector. This should be resorted to only in extreme emergency.

(3) The boundary extends approximately 1400 yards to the rear. When forward battalions are assigned extended frontages, it is desirable to allot them additional depth. In this particular situation, however, BROWN HILL is so important that it should be well organized by a minimum of one company. Neither front-line battalion can spare the

troops necessary for this. For this reason, the hill is included in the area of the reserve battalion, thus limiting the depth of the forward battalion areas to 1400 yards.

(4) The terrain in the regimental sector calls for a forward slope defense. It is particularly desirable that the positions in the vicinity of HOUSER ROAD be well forward to gain the maximum observation and fields of fire. In order to indicate this to the forward battalion commanders, the limiting point is placed on the forward slope of the ridge.

(5) The left battalion area is predominantly open and rolling; it affords good observation and long fields of fire. As a result, it can be defended with two rifle companies in positions on the high ground and one on the reverse slope. Each forward company area will be of normal frontage and, therefore, can be strongly organized for all-around defense. The gaps are sizeable but can be covered by observation and fires. By organizing its positions in a normal manner, the reserve company can defend a wider area and furnish depth and excellent protection of the flanks and rear.

(6) The right battalion area could be defended with a greater economy of troops if the forward positions were organized on ORR HILL and SAMS HILL. The desirability of this economy, however, is more than nullified by the fact that it would give the enemy control of the hill at (78.0-78.2) and the woods northeast and northwest thereof. This, in turn, would afford the enemy major advantages in preparing and launching an attack in this sector. To eliminate this situation, it is essential that these terrain features be included within the positions organized by the right battalion. To organize this forward area in such a manner as to insure an adequate defense of the critical area between the right boundary and the edge of the woods at (78.7-79.0), requires two rifle companies.

(7) At least one rifle company is needed to organize SAMS HILL. If the third company of the right battalion should be used to organize SAMS HILL, there would be no depth to the defense in this area and no all-around defense of ORR HILL. The tactical importance of ORR HILL and the need for depth, mutual support and all-around defense

in this critical area make it imperative that a position on ORR HILL be organized and occupied. At least one rifle company is needed to accomplish these missions effectively. Since there are only three rifle companies in the infantry battalion, an additional company must be made available if none of these defense areas is to be left unoccupied. One solution would be to place all three battalions on the MLR, allotting the SAMS HILL area to the center battalion. (The disadvantages of this are discussed above.) Several other solutions are possible. The one presented here is to attach one rifle company, reinforced, of the reserve battalion to the right battalion. This attached company could be utilized to organize either ORR HILL or SAMS HILL. It is preferable to employ it on SAMS HILL for this allows greater tactical unit to the right battalion in the organization of the critical area astride HOUSER ROAD.

b. Regimental reserve. (1) To insure maximum flexibility, the regimental reserve should be as strong as possible consistent with the troop requirements for the organization of the forward portion of the battle position. As already noted, one rifle company, reinforced, of the reserve battalion is attached to the right front-line battalion.

(2) The attachment of two platoons of the tank company to the reserve battalion contributes to the flexibility of the defense and permits maximum utilization of the mobility and shock action of the tanks.

(3) The company positions to be prepared by the reserve battalion are on the high ground in the rear portion of the regimental area; they cover the flanks of the sector and the roads and other critical avenues of mechanized approach. Thus they provide the desired emphasis on the organization of key terrain features for all-around defense. These positions are not initially occupied because each is readily and quickly reached by motor transport from a good assembly area; they are far enough in rear of the MLR to permit occupancy before the enemy can penetrate to them; and greater speed and coordination in executing counterattacks are possible when the reserve is held mobile. By thus providing for the reserve to accomplish quickly either of two

possible missions—occupation of prepared positions or counterattack—considerable flexibility is added to the defense. Keeping the reserve mobile is, of course, considerably facilitated in this situation by the presence of an assembly area which possesses nearly all the desired characteristics.

(4) The designation of the possible areas of penetration by the enemy for which counterattack plans will be made is likewise influenced by the importance attached to key terrain features in the defense of an extended frontage. Enemy capability number 1 (see Map 2) would give the enemy excellent concealed areas for organizing and launching an attack against ORR HILL. The loss of ORR HILL would seriously jeopardize the entire battle position. From it the enemy would have an excellent route (HOUSER ROAD) with abundant concealment on both sides along which to continue his attack into the rear of the sector. A counterattack would have to be launched before the enemy succeeded in crossing HUNT ROAD and attacking ORR HILL. Either of the other two penetrations would be critical for it involves capture by the enemy of a key terrain feature. Penetrations of other portions of the MLR are likely but would be less critical for they would be on low ground and would be subject to observation and intense fire from the higher ground adjacent.

c. Combat outpost line. The location prescribed for the combat outpost is 2000-3000 yards forward of the MLR. This is somewhat in excess of the distance believed best when a normal frontage is being organized. Factors which justify this apparent deviation include the following:

(1) The eastern edge of CALEDONIA (79-76) affords a strong and natural defensive position.

(2) A combat outpost closer to the MLR would give the enemy entry, unopposed except by long range harassing fires, into CALEDONIA.

(3) Observation and fields of fire are less obstructed by the wooded draws than they would be on any position closer to the MLR.

(4) Hill 448 (78-77), while excellent as an outpost position in most respects, is too close to the MLR to permit effective accomplishment of the missions of a combat outpost.

(5) Excellent routes of withdrawal are available.

In addition to the actual location selected, two other elements of the order reveal the greater importance attached to the combat outpost because of the extended frontage. One is the site of the outpost; the other is the specific requirement that all possible fire support be given initially to the combat outpost.

d. Tank company. (1) Elements of the tank company are employed well forward because virtually the entire area forward of the MLR is suitable for mechanized movement. Fields of fire covering that area are excellent. These factors, together with the extended frontage, make it necessary to employ at least two tank platoons well forward to reinforce the fires of antitank weapons of both front-line battalions. No one portion of the area is so much more vulnerable than others to mechanized attacks as to warrant assigning it priority in the disposition of the tanks of these two platoons. HUNT ROAD enters the sector in the vicinity of the limiting points on both flanks. These two approaches from both flanks are ideal for mechanized attack and must be covered. Since there are insufficient antitank weapons available to cover the entire front, flanks, and rear, the tanks of these two platoons must initially be emplaced where they cover the most dangerous avenues and have supplementary positions prepared which cover the less dangerous approaches to the front and the possible avenues from the flanks and rear of each organized terrain feature. The extended frontage makes flexibility double important. This necessitates the most minute planning for the movement of tanks to supplementary positions or to a threatened locality.

(2) Employing the other two platoons of the tank company in the rear portion of the regimental sector insures the necessary depth to the antimechanized defense and, as has been stated, makes possible the addition of armor to the counterattacking force.

e. Mortar company. Because of the many advantages which it affords, employment of the mortar company by battery is desired. When the frontage is extended, however, this is impossible without considerable sacrifice in the size of the area that can be covered forward of the MLR. To avoid this sacrifice, the three mortar platoons must be located at some distance from each other.

This separation increases the difficulties of company control and, as a result, the likelihood that platoons will need to be attached to battalions rather than in direct support. Such factors as the extent of the distances between platoons, the nature of the terrain, and the communication facilities available, will greatly influence the decision as to whether the mortar platoons must be attached to battalions. In this situation these factors are such as to warrant employing two platoons in direct support and one in general support under company control. Were the distances greater or the terrain more of an obstacle to communication and movement within the battle position, attachment to battalions would be necessary. The general similiarity of the terrain forward of the two front-line battalions calls for mortar support for both battalions. Since the right portion of the sector is considered more critical, the third platoon is placed in general support with priority to the right battalion. This gives more fires to the right battalion but makes provision for shifting if necessary. To place it in direct support of the right battalion would be to sacrifice this flexibility. Finally, the position assigned to the general support platoon permits coverage of the entire right battalion sector for a considerable distance forward of the MLR. By shifting the platoon, fires could be delivered anywhere immediately forward of the left battalion.

f. Field artillery battalion. The range and capabilities of the 105-mm howitzer are such that no important change in the principles governing the employment of the supporting field artillery is necessitated when an extended frontage of 5,000-10,000 yards is being defended. Normal barrages will still be planned for the most dangerous enemy approaches. As noted earlier, the artillery is one of the key

units which must contribute to the increased flexibility of fires required in the defense of an extended frontage. It accomplishes this by planning more concentrations and providing for more detailed coordination relative to requests for and delivery of fires.

g. Engineer company. As with the artillery, the employment of engineers is relatively unaffected by the assignment of an extended frontage. Missions generally remain the same; the difference lies in the fact that certain of them assume added importance. In this situation the suitability of the area forward of the MLR for mechanized movement makes a coordinated antimechanized defense plan vitally important. The extended frontage to be covered by antitank weapons, in turn, makes the role of mines in this defense plan more important than normally. For this reason mine-laying by the engineers is given a high priority. In similar fashion the engineers are called upon for a significant contribution to the flexibility which the extended frontage makes so vital. It is their responsibility to prepare and improve routes within the battle position which will insure the rapid movement of reserves and to prepare supplementary routes, bridges, etc. for use in event of enemy interdiction or destruction of existing routes of communication and supply.

CONCLUSION

This solution is, of course, not the only sound solution for this situation; neither can it be accepted as applicable in all other situations where such factors as terrain, weather, and size and composition of the friendly and enemy forces can be expected to vary widely. What this particular situation and solution do accomplish is to support, by practical application, the general thesis stated earlier—an extended frontage does not create totally new and different problems and, therefore, does not require either sacrifice or major modification of normal principles; but rather increases the problems already inherent in the organization of a defensive position on a normal frontage and permits their solution by application of existing principles with only minor adjustments.

Combat Tactics of the Rifle Platoon

Section 1
GENERAL

1. SCOPE. This article discusses the combat tactics of the rifle platoon to include combat formations, the duties of leaders, and the conduct of the platoon in attack, defense, pursuit, withdrawal, and security missions.

2. TEAMWORK. Teamwork is essential to success in combat. Squads must cooperate with other squads; platoons must work closely together to achieve the company objective. Teamwork is stressed in all training of the platoon and company.

3. FIREPOWER. *a.* Grouping squads into platoons and companies greatly increases their fire power. The rifle company, in addition to the fire power of nine rifle squads and three weapons squads, has other crew-served weapons that add to the over all fire power. Weapons such as 60-mm mortars, 57-mm recoilless rifles, and on occasions, portable flame throwers, add to the effectiveness of the modern rifle company. These weapons, utilized as part of the company weapons platoon or placed in support of the rifle platoons, assist in forming a base of fire to support the advancing rifle units.

b. (1) Rocket launchers and high explosive rockets are provided primarily for use against armored vehicles. Secondary targets are crew-served weapons, embrasures, pillboxes, and grouped personnel. They are also effective against buildings and masonry. Ammunition must be conserved to insure effective use against primary targets. The rocket may be fired from the prone, standing, or kneeling positions, and it may also be fired from the foxhole or pit-type emplacement. There is one rocket launcher in the weapon squad of each rifle platoon which is normally operated by a rocket gunner and an assistant rocket gunner.

(2) The performance of the high explosive rocket is generally similar to that of the antitank rifle grenade, except that the effect is about 30 per cent greater for the rocket than for the grenade. The rocket is reasonably accurate against moving targets at ranges up to 300 yards and against an area target up to 650 yards. In order to achieve greater accuracy and assist in securing surprise, fire against moving targets is withheld until the last practicable moment.

c. The 57-mm rifle, in the attack, may be used as a company assault gun to place direct fire on definitely located targets, such as pillboxes, automatic weapon emplacements, artillery and antitank gun emplacements, vehicles, and grouped personnel. In defense, the 57-mm rifle delivers direct fire against enemy crew-served weapons, mechanized vehicles, or grouped personnel. The 57-mm rifles are operated by the 57-mm gun section of the weapons platoon. *The 57-mm rifle unit is kept under company control when positions from which the entire company front can be covered are available.* It may be attached to a rifle platoon in such operations as pursuit, or security duty where the rifle platoon operates at considerable distance from the company. This attachment is made when positions suitable for employment of the section as a unit cannot be found.

4. SECURITY. *a.* Security includes all measures taken by a unit to protect itself against annoyance, surprise, and observation by an enemy. Units must provide for their own security at all times, regardless of the security measures taken by higher commanders.

b. Adequate and timely information of the enemy is the basis of security. If a commander knows where the enemy is and what he is doing, there is little danger of a surprise attack. Therefore, reconnaissance must be continuous. A leader never commits his forces to action without making as detailed a reconnaissance as time permits.

c. Security detachments are always sent out to protect the front, flanks, and rear of a unit. On the march, these groups include advance guards, flank guards, and rear

guards. Outposts protect a unit that is halted or at rest. Patrols provide security during the attack and in the defense.

d. The best security measure is to attack the enemy vigorously, so that he must be concerned with his own safety and has little opportunity to launch surprise attacks.

5. RESERVES. Whenever possible, especially in the initial stages of an attack, the leader holds part of his unit in reserve. A support squad is designated in the rifle platoon, and the company commander usually keeps a platoon in support. These reserves are used as maneuvering elements when forward units are held up, to meet surprise attacks, to reinforce the attacking forces, and to replace seriously weakened front-line units.

6. COMBAT INTELLIGENCE. *a.* The staffs of battalions and higher units include one officer who is responsible for collecting, evaluating, interpreting, and distributing information about the enemy and the terrain. He is the unit S-2 or intelligence officer. The procurement of maps and photos is a responsibility of the unit S-2 and he may either interpret or have interpreted aerial photographs for his unit. He supervises the activities of patrols within his unit.

b. The higher commander, through his S-2, will often request that a unit provide him with certain essential information. Such requests should be acted upon promptly. In addition, all new information about the enemy is reported at once. First contact with the enemy and new identifications of enemy units are always reported by the fastest means available.

c. Higher headquarters cannot provide the small-unit commander with all the information about the enemy that he needs. Therefore, he must also act as his own S-2. Observation posts and patrols are employed, as well as personal reconnaissance. Every soldier is trained to report items of intelligence value. Within the rifle company, certain soldiers should be specially trained to assist the commander in gathering and reporting information. Such specially trained men are the communication sergeant, the bugler, all riflemen, and observers in the weapons platoon.

7. ANTIMECHANIZED DEFENSE - ANTIAIRCRAFT SECURITY. *a. Warning system.* Timely warning is important in reducing losses from air or mechanized attack. Air-antitank guards are detailed to protect the company or separate platoon. These guards are assigned sectors of observation.

b. Action in case of attack. (1) *General.* (a) Upon receiving a warning of air or mechanized attack, foot troops on the march clear the road, disperse, and take cover. When the halt is expected to be brief, troops seek protection in nearby holes or ditches, and take advantage of any nearby tank obstacles. Weapon carriers, if with the unit, clear the probable area of air attack and move into suitable nearby locations which provide obstacles to tank movement.

(b) Whenever troops remain in position for any length of time, they dig foxholes and weapon emplacements for protection against air or tank attack.

(2) *Antimechanized fire.* (a) When attacked by mechanized vehicles, the defenders direct their fire primarily against enemy foot troops following or riding on the vehicles. Infantry small-arms fire is not very effective against armor, but under favorable conditions, armor-piercing ammunition may damage tank sprockets, bogie wheels, and track suspension. When no enemy infantry appears, fire is directed against armored vehicle crews who are operating with open turrets, doors, and vision slits. The defenders continue to fire until forced to take cover in their foxholes to protect themselves and their weapons from the crushing action of the vehicles. They return to their firing positions as soon as the tanks have passed, to fire on approaching foot troops or exposed personnel riding on the tanks.

(b) All company weapons that are effective against tanks bring the enemy tanks under fire at the maximum effective range of the weapon and continue to fire until forced to take cover. Rocket launchers, 57-mm rifles, and antitank rifle grenades are the rifle company's active defense measures against mechanized attack.

(3) *Antiaircraft fire.* Fire will not be delivered against any airplane unless it is clearly identified as belonging to the

enemy, or attacks with bombs or gunfire. Concealment and camouflage are used whenever possible to prevent detection by enemy aircraft. If concealment is believed to have been achieved, no weapons are fired at approaching enemy planes. If concealment does not exist, or if the planes attack, fire is opened upon command or prearranged signal of the unit leader as soon as the attacking planes are within effective range.

Section 2
THE RIFLE PLATOON

8. GENERAL COMPOSITION. A rifle platoon consists of a platoon headquarters (command group), three rifle squads, and one weapons squad. The command group is comprised of a platoon leader, platoon sergeant, assistant platoon sergeant, and two messengers. The weapons squad consists of one light machine-gun team and one rocket launcher team, each of four men.

9. DUTIES OF THE COMMAND GROUP. *a.* The platoon leader is responsible for the training, discipline, control, and tactical employment of the platoon.

b. The platoon sergeant is second-in-command. He assists the platoon leader in controlling the direction and rate of movement in the advance. During all operations, he takes post where the platoon leader directs, so as best to assist in control of the platoon. He takes command when the leader is absent or becomes a casualty.

c. The assistant platoon sergeant prevents straggling and enforces orders concerning cover, concealment, and discipline. He is usually in rear of the platoon where he observes the situation on the flanks and rear. He supervises ammunition resupply and distribution.

d. When the company prepares for action, one messenger reports to the company commander, and one stays with the platoon leader.

e. The attached aid man provides first aid treatment to sick, injured, or wounded men of the platoon.

10. CONTROL AND COMMUNICATION. The platoon leader controls his platoon by oral orders, or by arm-and-hand signals. Communication with company headquarters

is by radio, soundpowered telephone, messenger, or visual signals.

11. THE ATTACK—MOVEMENT TO CONTACT. *a. Dispositions.* When contact is imminent and the company commander has ordered the deployment of his company, the platoon moves as part of the company. The usual formations are platoon column, platoon line, platoon vee, and platoon wedge. The company commander usually prescribes the initial formation, but allows the platoon leader to change formation to suit the ground and enemy situation.

(1) *Platoon column.* This formation is vulnerable to frontal fire, and the platoon cannot use all of its weapons. However, it is easy to control and maneuver. It is especially suitable for narrow, covered routes; for moving through woods; and in fog, smoke, or darkness. The depth of a platoon column averages 150 to 200 yards.

(2) *Platoon line.* This formation enables the platoon to deliver the greatest fire power to the front in the shortest time. It is difficult to control and maneuver, but it is also less vulnerable to frontal fire. This formation is suitable for moving the platoon to the line of departure in a frontal attack or attack against the enemy flank when maximum fire power is desired, or for rapidly crossing an area exposed to long-range mortar or artillery fire which cannot be avoided.

(3) *Platoon vee and platoon wedge.* These formations provide security to both front and flanks, favor maneuver and control, and are flexible.

(4) *Echelon right or left.* These formations are used to protect an exposed flank, and permit maximum fire to be delivered toward that flank.

b. Direction and rate of advance. (1) The company commander usually designates a base platoon. The leader of this platoon is responsible for maintaining the direction and rate of advance of the company. The platoon halts only on orders from the company commander, or when forced to do so by the enemy.

(2) Each platoon leader designates a base squad on which the other squads guide their movements. He indicates

the direction of advance by pointing or moving in the desired direction, or he may give the base squad leader the route, unit, or magnetic azimuth to follow.

(3) When a night move is contemplated, unless the platoon follows another unit, the platoon leader usually makes a daylight reconnaissance beforehand, plotting the route by compass bearings on a sketch or map.

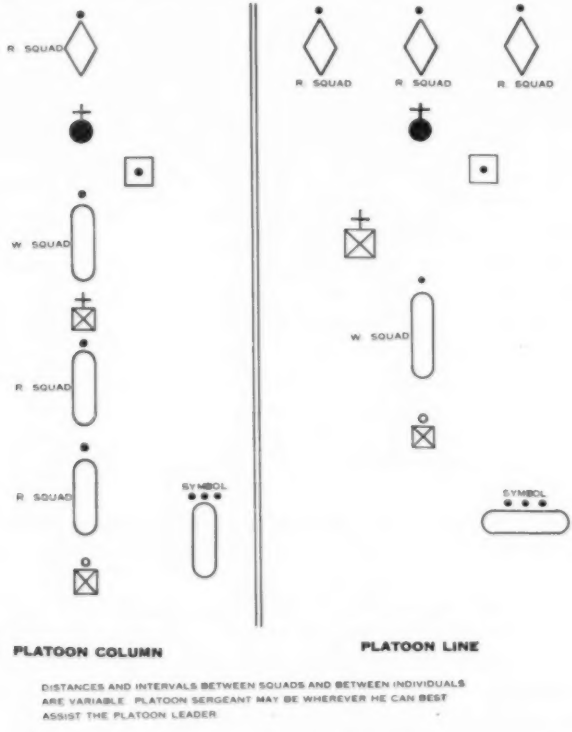


Figure 1. Platoon formations.

c. Contact. When the platoon follows another unit at night, connecting files are used to keep contact, unless the tail of the other unit can be clearly seen. Connecting files are also used in daylight if the terrain makes visual contact difficult. When the connecting files consist of two men

(double connecting file), one man watches the larger unit for signals, the other observes the front.

d. Movement to successive objectives. (1) In a daylight approach march, the platoon leader is given an initial march objective by the company commander. When this objective cannot be pointed out to the base squad, the platoon moves to it by bounds from one intermediate march objective to

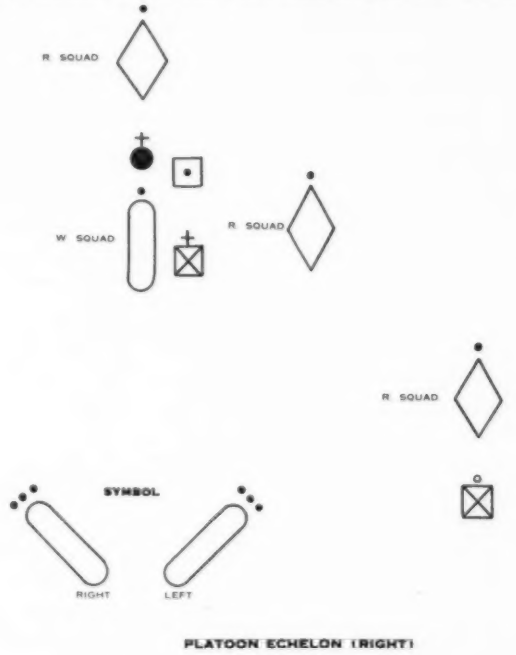

R SQUAD
W SQUAD
R SQUAD
R SQUAD
SYMBOL
RIGHT
LEFT
PLATOON ECHELON (RIGHT)
DISTANCES AND INTERVALS BETWEEN SQUADS AND BETWEEN INDIVIDUALS ARE VARIABLE. PLATOON SERGEANT MAY BE WHEREVER HE CAN BEST ASSIST THE PLATOON LEADER

Figure 2. Platoon formations.

another. The platoon leader indicates each new objective to the base squad leader in time to prevent any unnecessary halt.

(2) The platoon leader marches between his security squads and the platoon to reconnoiter a zone of advance.

He detours the platoon around a heavily shelled area, or takes advantage of lulls in the enemy fire to cross the area by rushes. The squads re-form on the other side of the area in a place indicated by the platoon leader. Areas exposed to to enemy observation are crossed rapidly, often in a single rush.

(3) Gassed areas are avoided. When an area is being

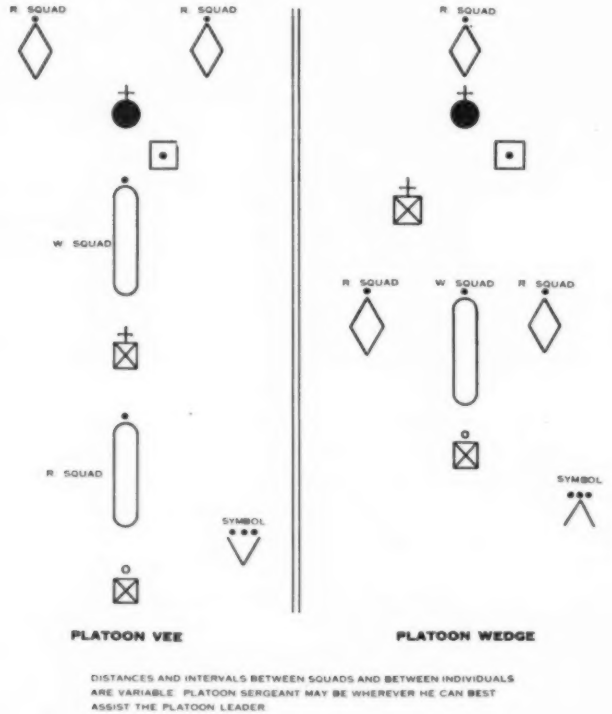


Figure 3. Platoon formations.

gassed, or when gas is discovered, it is reconnoitered to discover its extent, then marked. A report is sent at once to company headquarters giving the exact location of the area and the type of gas.

(4) Mined areas are avoided. When an area is believed to contain anti-personnel mines or booby traps, it is reconnoitered to discover its extent, then marked. A report is sent at once to company headquarters giving the exact location of the area and the type of mines or booby traps.

e. Action when enemy is encountered. When the enemy opens fire on one part of the platoon, the remainder of the platoon continues to advance toward the march objective. From positions on the enemy flanks they assist by fire, or fire and maneuver, the unit that is under enemy fire.

f. Zone of reconnaissance. In a daylight approach march, the company commander assigns a zone of reconnaissance to each leading rifle platoon. A leading platoon covers its zone with the riflemen of the leading squad or squads. The squad leader of the leading squad regulates its movement so as to insure security against enemy fire on the platoon from points within midrange (400-600 yards). There are three methods of doing this:

(1) The platoon may be held under cover while two or three riflemen go forward to the march objective. When they signal "forward," the platoon moves up to them, and the riflemen are then sent to the next objective. This method affords the best security, but requires careful training to attain speed and proficiency.

(2) The platoon stays under cover, the leading squad goes forward, and the platoon leader follows closely behind it. When the objective is reached, the squad is sent to the next objective, and the platoon is signalled forward.

(3) The lead squad precedes the platoon at midrange, and the platoon leader follows it. This method permits the platoon to advance rapidly without being exposed to enemy small-arms fire at midrange. It is used over level, open terrain where there are no suitable march objectives.

g. Final phase of the approach march. The approach march for the platoon ends when the fire fight begins.

12. RECONNAISSANCE, PLANS, AND ORDERS. *a. General.* The company order prescribes whether a platoon is to be initially in the attacking or support echelon. The

platoon leader of an attacking (leading) platoon is given a line or area of departure, a direction of attack, and a specific objective to be captured.

b. Reconnaissance. Upon receiving the company order, the leader of an attacking platoon makes a terrain reconnaissance with his noncommissioned officers. During this reconnaissance he makes an estimate of the situation and formulates his plan of attack.

c. Plan of attack. (1) In making his plan, the platoon leader considers:

(a) The terrain—where enemy guns and men are or may be located; cover for his squads; a covered approach toward the objective.

(b) Whether his flanks will be exposed, or protected by friendly troops.

(c) Where he must place the fire of his weapons; covered routes to approach the weapons positions.

(2) Having studied the ground, he makes his plan by answering this question: "How can I use my men and weapons to accomplish my mission with the least delay and minimum casualties?"

d. Methods of attack. (1) Unless the platoon needs all of its fire power at the start of an attack, one squad is usually held in support. When the attack is over open, level ground, or when all fire power must be used from the start, the platoon may attack straight to the front in line of squads.

(2) Frequently the best method is to have a small group work close to the target under cover, while the rest of the platoon attacks straight to the front. A few riflemen and automatic riflemen can often work close to an enemy position over ground which would not provide cover for a larger group.

(3) In other situations, the platoon may attack straight to the front with one or two squads, the others attacking the enemy from a flank. Sometimes the entire platoon may attack the enemy flank.

e. Platoon attack order. (1) Having made his plan of attack, the platoon leader issues his order to the squad leaders,

including the leaders of attached squads. After pointing out the important terrain features, he gives them any new information; the company objective; missions of adjacent units; support to be given by the company weapons platoon and other supporting weapons; platoon objective; and the hour of attack. He outlines his scheme of maneuver, including the initial and subsequent platoon objectives; the line (point or area) of departure of each squad; the mission and target(s) of each squad; and security measures. He tells the squad leaders where the battalion aid station will be, and of his own position and expected movements.

(2) The platoon leader makes certain that all squad leaders understand his order, having them repeat it if necessary. They then return to their squads and issue their own orders.

13. ATTACK. *a. Movement across line of departure.* At the specified time or on signal, the platoon moves from the assembly area across the line of departure. Before arriving at the line of departure, the platoon takes up its attack formation. The squads, however, continue across the line in diamond formation. They do not deploy further until compelled to do so by enemy fire.

b. Conduct of attack. (1) *Location of platoon leader.* The platoon leader follows his attacking echelon closely. He goes wherever he can best observe the situation and control his platoon.

(2) *Fire and maneuver.* (a) When the platoon comes under effective small-arms fire, further advance is usually by fire and maneuver. Fire superiority over the enemy is gained; under cover of this fire, other elements of the platoon maneuver forward. In turn, these elements may occupy firing positions and cover the others as they advance. The platoon leader attacks enemy weak spots with his support squad, or maneuvers it around a flank to strike the enemy with surprise fire on the flank and rear.

(b) If fire from other enemy positions makes it impossible to attack an objective from the flank, an assaulting force is built up by moving a few men at a time toward the enemy position while the rest of the platoon protect their advance by fire. The position is then taken by assault.

(c) When enemy resistance is weak, the platoon drives rapidly ahead until the company objective is captured, regardless of the progress made by units on its flanks.

(3) *Flanking movements.* The platoon can rarely make a wide flanking movement. At times, however, part of the platoon may have to maneuver in an adjacent zone to approach the enemy position. This is done only if it does not interfere with the action of the other unit. If the platoon must maneuver in the zone of another unit, the leader first sends a messenger to the adjacent commander, telling him of the intended action.

(4) *Contact with adjacent units.* The platoon protects its flanks by utilizing connecting groups of two or three men. When a considerable gap occurs between his platoon and an adjacent unit, the platoon leader makes a personal reconnaissance of the gap. He reinforces the connecting group, and reports his actions promptly to the company commander.

c. Assault. The assault may take place either on the orders of the platoon leader, or as part of a general assault ordered by the company or battalion commander. The attacking echelon of the platoon works its way as close as it can get to the enemy position without masking friendly supporting fires. For a platoon assault, supporting fires are lifted on a prearranged signal given by the platoon leader. A general assault is delivered at an hour fixed by the company or battalion commander, or on his signal. Frequently, in the heat of battle, the assault is begun on the initiative of a squad or even of a few individuals. Wherever and whenever the assault begins, everyone engaged in the fight immediately joins in taking vigorous and aggressive action against the enemy.

d. Advance through enemy position. As soon as the initial objective is captured, the platoon leader makes a quick personal reconnaissance, then promptly issues orders to renew the attack. An attacking platoon does not delay to clean up isolated points of resistance; units in rear take care of them.

e. Reorganization. (1) Upon capture of an objective, the first action taken is to organize the position to repel a counterattack. The platoon leader reorganizes his platoon as casualties occur. Leaders and other key men are replaced; ammunition is taken from casualties and redistributed; a message is sent to the company commander giving the fighting strength of the platoon and the amount of ammunition on hand. Prisoners are sent to the company command post.

(2) Unless the attack is to be resumed right away, the platoon digs in to meet an enemy counterattack.

(3) After issuing his orders for reorganization, the platoon leader makes a brief personal reconnaissance to the front and flanks. He selects the best routes for moving forward if the platoon is to resume the attack. If other troops are used to continue the attack, the platoon supports them by fire.

14. PURSUIT. When the platoon reaches its final objective, the enemy is kept under fire as long as he is within effective small-arms range. He is not pursued except on order of the company commander. Some 60-mm mortars are frequently attached to rifle platoons when they pursue the enemy. Also, in pursuit or an operation in which platoons are operating independently, 57-mm rifle squads are often attached to the rifle platoons.

15. SUPPORT PLATOON. *a.* In the early stages of an attack, the company commander usually keeps one or two platoons in support. Missions of the support platoon are:

(1) To envelope, or attack in flank, enemy positions holding up the attacking echelon.

(2) To reinforce the attacking echelon by fire.

(3) To furnish security to the flanks (connecting groups of flank combat patrols).

(4) To assist adjacent units by fire and maneuver.

(5) To furnish protecton against counterattacks when the attacking echelon is reorganizing.

(6) To relieve a platoon of the attacking echelon.

(7) To mop up a position by-passed by the attacking echelon.

b. The support platoon advances by bounds, in accordance with the company commander's instructions. During the advance, the platoon leader makes tentative plans for the employment of his platoon.

c. A support platoon provides its own protection. It may also protect the flanks of the attacking echelon by flank patrols or from positions on the flank. Connecting groups are often furnished by the support platoon to maintain contact with adjacent companies.

Section 3

EMPLOYMENT OF THE RIFLE PLATOON IN DEFENSE

16. TACTICAL EMPLOYMENT. *a. General.* A front-line rifle company organizes its assigned defense area by assigning platoon defense areas to each of the three rifle platoons. Normally two platoons will be placed forward and one in support. Each rifle platoon is assisted in the defense of its area by the fires of supporting weapons. Some of these supporting weapons will be located within the platoon defense area.

b. Missions. (1) *Front-line platoon.* The mission of the front-line platoon is, with the support of other units, to stop the enemy by fire in front of the main line of resistance and to repel him by close combat if he reaches it.

(2) *Support platoon.* The primary mission of the support platoon is to support the front-line platoons by fire and thereby contribute to the defense of the main line of resistance. This platoon is also assigned the mission of extending in depth the defense of the company area; protecting the flanks and rear; and ejecting the enemy from the battle position by fire, or exceptionally by counterattack, if he effects a penetration.

17. FRONTAGE AND DEPTH. *a. Frontages.* The company commander assigns frontages to the rifle platoons in accordance with the natural defensive strength of the position and relative importance of the defense areas. Where a platoon occupies a vital area having poor observation and poor fields of fire, such as in heavily wooded or broken terrain, the frontage of its area may not exceed 300 yards.

Where the area is more open and affords longer fields of fire, a frontage of 600 yards may be assigned. The frontage physically occupied by the platoon is determined by the extent of the interval that can be left between foxholes without jeopardizing the effectiveness of the defense, and by the number of supporting weapons within the area. The size of the intervals, in turn, is determined by such factors as observation, fields of fire, and obstacles. In general, the intervals between foxholes may vary from 5 to 20 yards. Under normal conditions, 25 yards are allowed for each crew-served weapon placed within the platoon area. The platoon covers by fire that portion of its front that is not physically occupied.

b. Depth. The company commander assigns sufficient depth to a rifle platoon to permit it to defend its area against an attack from any direction. If good fields of fire to the flanks and rear are available from the front-line foxholes, the platoon may be assigned a depth as little as 50 yards. If, however, it is necessary for elements of the platoon to move from their forward positions in order to secure adequate fields of fire to the rear or flanks, a depth up to 200 yards may be assigned to the platoon.

18. DISTRIBUTION OF SQUADS. *a. Rifle squads.* The rifle platoon leader disposes his rifle squads to cover the front of the platoon area and the intervals on the flanks, and to furnish mutually supporting fires with adjacent platoons; or, in the case of support platoons, with front-line platoons. Where the assigned frontage is so narrow that there are few or no gaps between platoons, the rifle squads may be located generally abreast. When occupying a wider frontage, better fire to the flanks and mutual fire support with adjacent platoons are obtained by drawing back the flanks. The exact trace of the platoon disposition is coordinated with supporting weapons located in its area. The automatic riflemen and antitank rifle grenadier normally remain within their squad areas.

b. Weapons squad. The weapons squad as a unit is not assigned a given frontage but the weapons are placed, usually on the perimeter of the platoon area, where they can

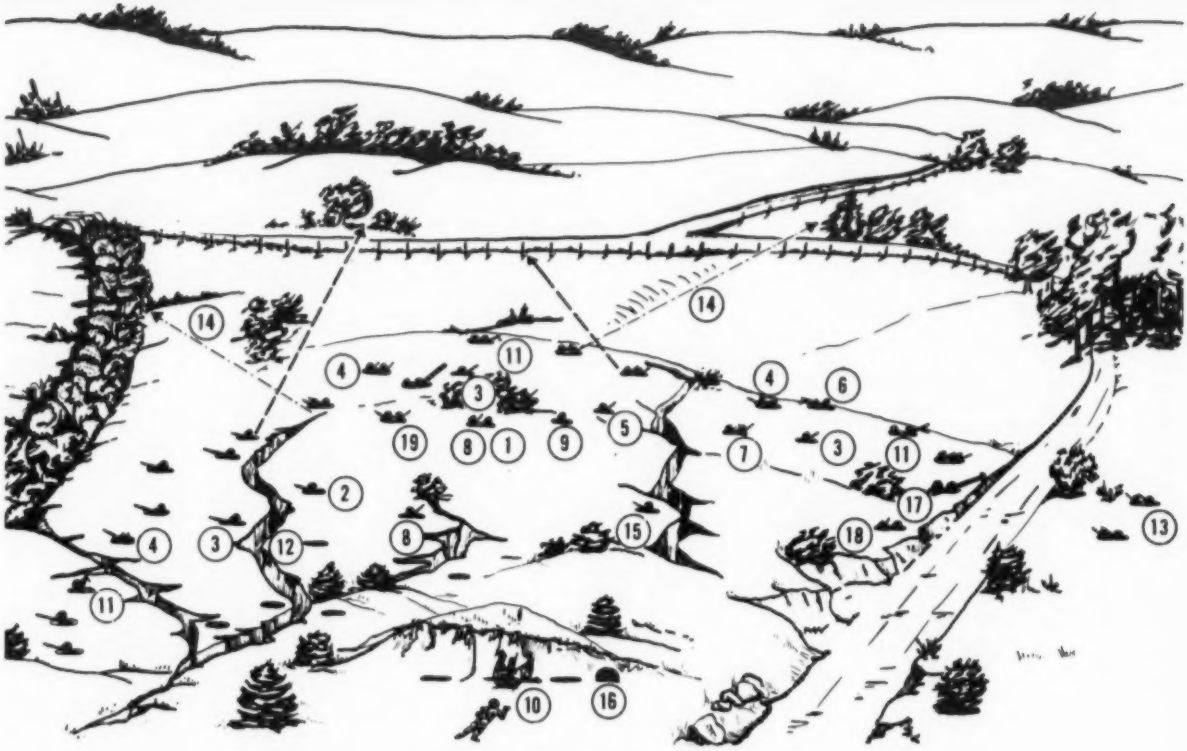


Figure 4. Rifle platoon in defense.

LEGEND FOR FIGURE 4

1. Platoon leader
2. Platoon sergeant
3. Rifle squad leader
4. Assistant rifle squad leader
5. Weapons squad leader
6. Gunner LMG, and assistant gunner
7. Ammunition bearers, LMG
8. Messengers
9. Observer, 60-mm mortar squad
10. 60-mm mortar with crew (attached)
11. Automatic riflemen
12. Ditch used as a covered route to supplementary foxholes so as to provide for defense to rear
13. Adjacent defense area

*14. Squad sector of fire, center squad; inner flanks of other squads indicated by broken lines

15. Platoon guide
16. Cache dug to serve as protection for mortar ammunition
17. Rocket gunner and assistant rocket gunner
18. Ammunition bearers, rocket launcher
19. 57-mm rifle squad (attached)

*Note: Left rifle squad occupies single foxholes. Center and right rifle squads occupy two-man foxholes. The type foxholes to be dug will depend upon the nature of the terrain and any special considerations incident to the defense of the area.

best accomplish their missions. The light machine guns of each front-line platoon will operate as single guns to protect the platoon defense area, to exchange mutual supporting fires with adjacent units, and to deliver final protective fires. Missions are normally assigned by the platoon leader in accordance with the battalion fire plan. Basic missions for participation in the final protective fires of the battalion fire plan may be assigned by the battalion commander. The platoon leader will designate the detailed locations and missions to accomplish the final protective fires and to afford the best protection of the platoon defense areas. The rocket launcher is placed in position where it can protect the platoon area against hostile mechanized vehicles using the most logical approach, or, it will block approaches that are not covered by other antitank weapons.

c. Supplementary positions. Except when riflemen can fire to the rear from their primary individual emplacements, supplementary positions for all-around defense to the flanks and rear are constructed and provisions are made for shifting part of the platoon to these positions. They should be located as close to the forward positions as the terrain permits. Wherever possible, natural cover, drainage lines, ditches, and other defilade are used for movement to supplementary positions.

19. PLATOON DEFENSE ORDER. The order should include:

a. Information of the enemy, including probable direction and time of enemy attack.

b. Information of supporting and adjacent units.

c. Platoon mission.

d. Location and mission of each rifle squad, including the automatic rifle team and the rifle grenadier.

e. Location and mission of the weapons squad, including the light machine-gun team and the rocket launcher team.

f. Location and mission of any attached 60-mm mortars and 57-mm rifles. (If attached to rifle platoons, their general mission will usually be indicated by the company commander.)

g. Security measures.

h. Priority of construction.

i. Details concerning ammunition supply, battalion aid station, and other administrative matters.

j. Location of platoon and company command posts.

20. SUPPORT PLATOON. The support platoon organizes its position in the same way as a front-line platoon. If the platoon cannot accomplish its mission from one position, other positions are organized and are occupied if the direction and nature of the enemy attack so requires. Under exceptional circumstances, it may be called upon to execute a local counterattack.

21. FIRE PLAN. *a.* The front-line platoon distributes its fire to cover the platoon front and flanks, and the fronts of adjacent platoons. Each rifle squad is given a sector of

fire. To insure complete coverage of the target, these sectors overlap. Flank squads also cover the area in front of adjacent platoons.

b. Support platoon squads cover the flanks of the forward platoons and gaps between platoons. The support platoon must be able to shift its fires to the flank or rear to defend against any enemy attempts to envelop the company.

c. Platoon fire plans are coordinated by the company commander.

22. COMMAND AND OBSERVATION POST. The platoon leader stations himself where he can best observe the front and flanks of his area, and can signal the squad leaders. His position should offer nearby cover for squad leaders and protected routes to the company command post. The platoon sergeant is located where he can watch the platoon leader for commands and control that portion of the platoon that is most difficult for the platoon leader to control directly.

23. ORGANIZATION OF GROUND. The defense area is strengthened and improved as long as the platoon occupies it. The automatic weapons are put in position first so that they can protect the platoon while it organizes the position. All men dig in, the position is concealed and camouflaged, and the foreground is cleared to permit effective fire.

24. SECURITY. The platoon provides its own local security by constant observation in all directions, by keeping the required number of personnel alert at all times, and by an effective warning system. Security measures are normally prescribed in the company defense order.

25. CONDUCT OF DEFENSE. Successful defense is predicated on each subordinate unit holding its area. The platoon holds its position at all costs. It never withdraws except upon the verified order of higher authority. Much depends on the subordinate leaders controlling the fire of their units and directing it against the most threatening targets. If an adjacent defense area is penetrated, fire is directed against that hostile force to prevent it from widening the break in the adjacent area and thereafter enveloping nearby platoons. Should the platoon be threatened

with envelopment, its leader makes changes in the disposition of personnel and of any supporting weapons in the area so as to insure all-around defense of the position. The company commander is kept informed of the situation at all times.

Section 4

THE RIFLE PLATOON ON SECURITY MISSIONS

26. GENERAL. On the march, the rifle platoon may act as an advance party, rear party, flank guard, or march outpost. It may be detailed on outpost duty to protect a bivouac, as part of a general outpost, as a combat outpost of a front-line battalion in defense, or as a flank patrol.

27. ADVANCE PARTY. *a.* When the platoon acts as an advance party, it is sent forward from the support (Figure 5). The advance party provides security for the support by firing on any enemy encountered, and by moving rapidly to learn the enemy dispositions. The advance party, in turn, sends out a point.

b. The advance party marches in column of twos, with one file on each side of the road. The commander is usually at the head or between the point and the advance party. However, he may go wherever he can best observe the ground and direct the advance party if the enemy is met. He is responsible for following the assigned route or direction of march, and usually, for the rate of march of the advance guard. The advance party sends forward connecting files to keep contact with the point.

c. A platoon advance party may furnish several small foot patrols of two or three men each which patrol up to 200-300 yards to each flank. The support commander must prescribe exactly what patrolling is to be done by the advance party.

d. Any resistance which the point cannot overcome is attacked at once by the advance party which deploys and attacks to the front or around a flank. Every effort is made to clear the way quickly for the remainder of the column. When the enemy is defeated, the march is promptly resumed.

e. When the advance guard halts, the advance party forms a march outpost. Observers are sent immediately to nearby points which offer observation to the front and flanks.

f. A platoon acting as advance guard for a small force is organized and acts as an advance party.

28. REAR PARTY. *a.* A company acting as the support of a rear guard will usually employ a platoon as rear party to provide security to the rear. The rear party, in turn, sends back a rear point of a squad or half-squad. The platoon drops back connecting files to maintain contact with the rear point.

b. When on foot, the rear party marches in column of twos with one file on each side of the road. The commander usually marches behind the rear party. From this position he can decide quickly what to do when the rear point is fired on. In his orders he states the distance, or time interval, at which the rear point is to follow the rear party. If on foot, this is usually not more than 200 yards in open country and less in close country. If motorized, a time interval of two minutes is usually prescribed. The distance between the rear party and the support is prescribed by the support commander.

c. A platoon rear party rarely patrols to the flanks. Rear guard patrols sent out by the support rejoin the rear party upon completing their mission.

d. When the rear party commander decides that it is necessary to fight in place, he selects a firing position providing long fields of fire and located well to the rear of the point position. He sends a runner to the leader of the point to lead the point to the rear party position. The withdrawal of the rear party is covered by the rear support.

e. When the rear support halts, the rear party forms a march outpost, dismounting if motorized.

29. FLANK GUARD. *a.* When a platoon is detailed to protect the flank of a marching column, it is often motorized. The platoon moves by bounds, blocking dangerous approaches to the flank of the column. Weapons effective against tanks may be attached.

b. If there is only a single avenue of approach to the flank of the column, the platoon may occupy a key terrain feature until the column has passed.

30. OUTPOST. *a.* The platoon may be employed as the support of an outpost. The leader is given the number of his support, its general location, and the sector it is to defend. His orders to squad leaders assign a sector to them, and tell them where the units on their right and left are located. He then moves the platoon to its sector, makes a personal reconnaissance, and selects posts for the outguards.

b. The platoon leader next issues a detailed order to include:

(1) Assignment of the outguards to their posts.

(2) Routes to reach the posts.

(3) What the outguards will do if attacked.

(4) Preparations to be made for defense of the position.

(5) Positions and sectors of fire for any attached supporting weapons.

(6) Messing arrangements, where to send messages, location of the command post.

c. Visiting patrols are sent out during the night to check on the outguards. They should be instructed in time to reconnoiter their routes during daylight. The patrol leader also inspects the outguards frequently during the night.

d. Outguards usually resist until the enemy forces them back. They then withdraw along routes indicated by the support commander.

e. When all preparations are completed and the outguards are posted, the leader makes a sketch of the support location and outguards. This is sent to the outpost commander.

31. DETACHED POST. *a.* The platoon may be detailed as a detached post to hold a terrain feature, such as a stream crossing or an important road junction outside of the outpost zone. The platoon organizes its position for all-around defense, posts observers to cover all approaches, and does whatever patrolling is necessary for its own security.

b. The platoon may be ordered to build and guard road blocks and demolitions. A position is taken within effective

range of the obstacle, but far enough away to minimize casualties from artillery fire or dive bombing on it. (200-400 yards.)

32. FLANK PATROL. The platoon acting as a flank patrol is conducted in the same manner as a squad given that mission. The patrol leader is told to go to a certain place, or to move abreast of the attacking echelon. On the march, the leader sends a point of four to six men 50 to 200 yards to his front. He protects the flanks, if necessary, by small patrols. When the platoon halts, observers are posted in pairs to watch the front, flanks, and rear. The remainder of the platoon is held under cover, ready to resist in any direction. Contact is maintained with the group being protected.

Combat Tactics of the Weapons Platoon

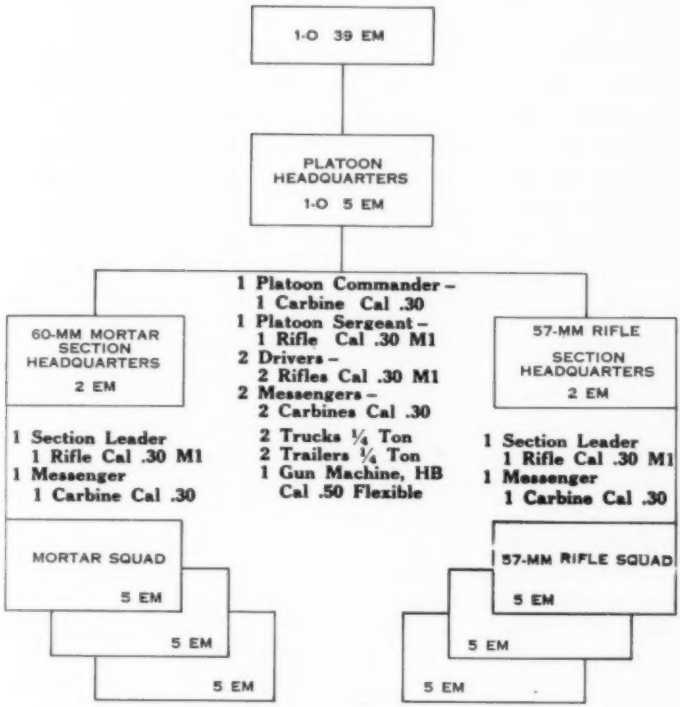
1. COMPOSITION. *a.* The weapons platoon consists of a platoon headquarters and two sections—the 60-mm mortar section and the 57-mm gun section. The platoon headquarters (command group) consists of a platoon leader, a platoon sergeant, two truck drivers, two messengers, and an attached aid man.

b. The 60-mm mortar section and the 57-mm gun section each consist of a section headquarters and three squads. A section leader and a messenger comprise the headquarters of each section. Each squad consists of a squad leader, gunner, assistant gunner, and two ammunition bearers. In addition to individual weapons, each mortar squad has one 60-mm mortar, and each 57-mm squad has one 57-mm rifle. The weapons platoon is provided with motor transportation to carry weapons, ammunition, and accessories. (Vehicles are utilized as far forward as is consistent with safety and terrain, at this point weapons must be taken from vehicles and hand carried.)

c. One .50 caliber machine gun is provided for protection of the vehicles against low flying airplanes and mechanized attack. When not engaged on its primary mission it may be used against other suitable ground targets.

2. DUTIES OF COMMAND GROUP. *a. Platoon leader.* During the tactical column and approach march, the platoon leader leads the platoon and controls the weapons carriers. He is responsible at all times for the training, discipline, control, and tactical employment of the platoon. The platoon leader keeps himself informed of the locations of the command post, the elements of his platoon, the leading rifle platoons, and the ammunition carriers. When practicable, he supervises the fire of all elements of his platoon. When this cannot be done, he supervises one section as directed by the company commander. He may designate the platoon sergeant to supervise the other sections. He is responsible for

WEAPONS PLATOON



EACH MORTAR SQUAD

1 Squad Leader –
1 Rifle Cal .30 M1
1 Gunner –
1 Pistol, Auto, Cal .45
1 Asst Gunner –
1 Pistol, Auto, Cal .45
2 Ammunition Bearers –
2 Carbines Cal .30
1 60-mm Mortar

EACH SQUAD

1 Squad Leader –
1 Rifle Cal .30 M1
1 Gunner –
1 Pistol, Auto, Cal .45
1 Asst Gunner –
1 Pistol, Auto, Cal .45
2 Ammunition Bearers –
2 Carbines Cal .30
1 Rifle, 57-mm (Recoilless)

Figure 1. Organization of the weapons platoon.

the supply of ammunition to all elements not detached from the platoon. He keeps the company commander informed of his position and his situation.

b. Platoon sergeant. During movement the platoon sergeant marches at the rear of the platoon and prevents straggling. During combat he may be placed in charge of a weapons section by the platoon leader. Otherwise, he keeps constantly in touch with the situation to the rear and flanks, supervises ammunition supply, and assists the platoon leader in observation and control of fire. When the platoon displaces, he follows the foot elements of the rearmost echelon.

c. Messengers. One messenger accompanies the platoon leader; another reports to the company commander when the company deploys.

d. Truck drivers. Truck drivers conceal and camouflage their carriers at all halts and are responsible for driver maintenance. They employ antitank rifle grenades for the antimechanized defense of their vehicles.

e. Aid men. The attached aid man performs duties as outlined for the rifle platoon.

3. SECTION AND SQUAD LEADERS. *a. Section leaders.* In the route and approach march, the section leaders lead their sections, and in combat they employ the sections as the platoon leader or company commander directs. They select and assign general locations for their squads within the area assigned to the section as well as targets or sectors of fire. They also regulate the displacement of weapons, the expenditure of ammunition, and its replenishment. The 60-mm mortar section leader conducts fire when more than one squad is firing at a target. Otherwise, his chief duty is to observe the rifle troops closely, and move the mortar squads in order to give them prompt support. The 57-mm gun section leader controls the fire when more than one squad is firing at a target. Otherwise, he observes for hostile mechanized attack and moves his squads to threatened points. Likewise, he observes rifle troops closely and moves his squads in order to give them timely support.

b. Squad leaders. Squad leaders are charged with the movement of their squads; selection, preparation, and occupation of firing positions; intrenchment; camouflage; observation and adjustment of fire; fire discipline; and the proper employment of ammunition bearers to replenish the ammunition supply.

4. CONDUCT OF FIRE. *a. 60-mm mortar section.* It is difficult to keep mortars supplied with ammunition. Therefore, the platoon leader or company commander usually determines the targets upon which fire will be placed. Their orders may be to engage specific targets, or to engage certain types of target which appear in a specified sector or target area. In the absence of orders, squad and section leaders rely on their own judgment. During an attack, they must be alert to locate hidden machine guns that may open fire on the advancing riflemen.

b. 57-mm gun section. (1) The 57-mm rifle may be used as a company assault gun to execute direct fire missions against definitely located targets such as pillboxes, automatic weapons emplacements, gun emplacements, vehicles of all types, and grouped personnel.

(2) If 57-mm recoilless rifles are assigned a principal direction of fire, they are also responsible for engaging any remunerative target in the company's zone or sector.

5. OBSERVATION. The platoon leader provides for constant observation of the company zone of action and the terrain to the flanks. The section leader places his own observation post where he can observe his targets or sector of fire and control his squads. Squad leaders place themselves where they can observe their sector of fire or targets, and control fire by voice or arm-and-hand signals.

6. ANTIMECHANIZED DEFENSE. *a. 60-mm mortar section.* Mortars are positioned, whenever possible, to take advantage of natural tank obstacles. In defense, an emplacement is dug for each mortar and crew. Other members of the squad dig foxholes. When tanks approach, the mortars are dismounted, and men take cover in emplacements or foxholes, or in any nearby holes or ditches. When

the enemy threat has passed, mortars are remounted and the men resume their firing positions.

b. 57-mm gun section. Antimechanized missions assigned to the section by the company commander will be carried out upon his order, or when the position is likely to be overrun by enemy armored vehicles. The 57-mm rifles are sited to cover likely areas of approach for enemy tanks, taking advantage of any obstacles to mechanized attack provided by the terrain.

7. MOVEMENT TO CONTACT. *a.* The weapons platoon (less weapon carriers) marches in the company column as directed by the company commander. Weapon carriers move with the battalion transport, except when the company is employed on a security mission such as support of an advance or flank guard or other mission requiring complete readiness for action. In this event, carriers march with the company under direct control of the platoon leader. The location and missions of the platoon in bivouac are assigned by the company commander.

b. When the platoon marches as a unit, the company commander prescribes its place in the company formation, indicates a march objective, and usually, a rifle element on which the platoon is to guide. When elements of the platoon are distributed throughout the company he gives them missions and indicates their place in the company formation.

c. Dispositions. In either *platoon column or line of sections, the sections may be in line of squads* or in *section column.* (Figure 2.) Formations and movements of the platoon, section, and squad are generally the same as those used by the rifle platoon and squad.

d. Carriers. Carriers may move with the foot elements, but on open ground, in daylight, they usually advance by bounds in rear of the foot element. At the end of each bound the carriers halt under cover. At night, they are usually held in the rear and moved forward under battalion or regimental control in time to reach the assembly area shortly after the foot elements.

e. Movement by bounds. (1) In a daylight approach march, the platoon moves by a series of bounds. The platoon

leader designates a base section, gives it a march objective, or has it guide on another unit.

(2) The platoon leader, with the command group, precedes the platoon along the route of march. Frequently he

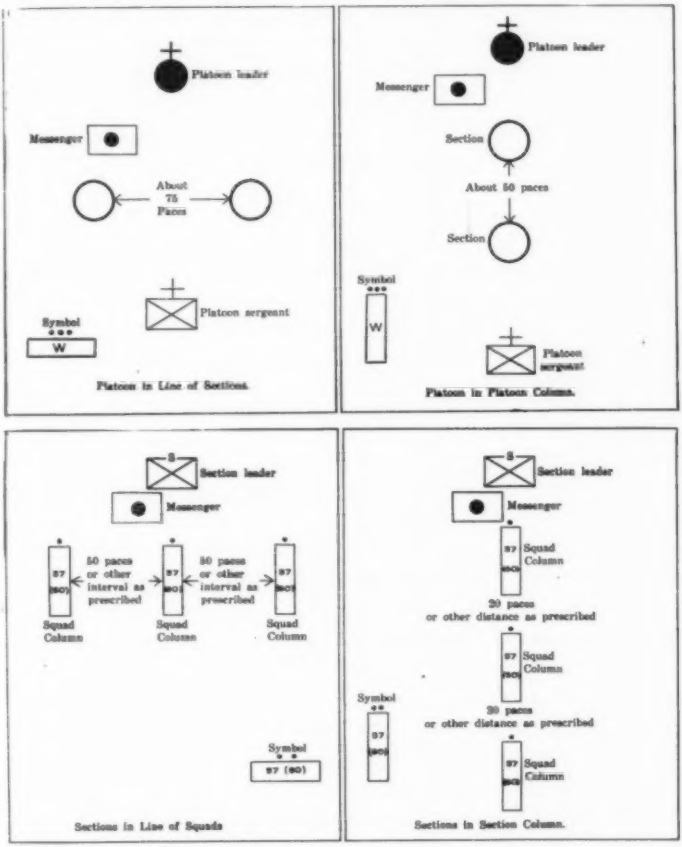


Figure 2. Disposition of weapons platoon in approach march.

moves with the company command group. When absent from the platoon, he leaves the platoon sergeant in charge and maintains contact with him by sight, connecting files, or messenger. He observes the route of advance and the

next terrain objective of the company for possible off-carrier positions and firing positions so that he can promptly place the platoon in action if the enemy is engaged. He reconnoiters for crossings or minor detours by which the weapon carriers may pass obstacles. He detours the platoon around gassed and mined areas and, if practicable, around areas being shelled. Dangerous areas may be crossed by a single rush in line of skirmishers. Each section may be closely followed by its carriers, or the latter may be directed to cross the area, in line and at high speed, when the foot elements have crossed.

(3) Areas under fire, when they cannot be avoided, are crossed by rushes of individuals or small groups under control of section leaders. When under enemy observation, sections and squads adopt formations similar to those used by rifle units under the same conditions.

(4) If a section is detached from the platoon, the section leader precedes his unit by a short distance and conducts reconnaissance similar to that prescribed for the platoon leader.

8. RECONNAISSANCE. *a. Platoon leader.* (1) The weapons platoon leader makes his reconnaissance and plan of attack in a manner similar to that described for a rifle platoon leader. He allows sufficient time for—

(a) His noncommissioned officers to reconnoiter and select firing positions, targets, and target areas for weapons that must be emplaced at the start of the attack, or to observe the ground over which weapons must be advanced if the initial mission is to follow a rifle unit.

(b) All squads to occupy initial positions and to prepare for their initial missions.

(c) Mortar squads to locate observation posts from which fire can be adjusted on initial target areas.

(2) The platoon leader can often speed up preparations for the attack by selecting observation posts or firing positions for the section whose readiness at the start of the attack is most important in the company commander's plan. This should be done whether or not the section will later be

under his control. Unless an off-carrier position is designated by the company commander, the platoon leader selects it, as well as the most forward point to which ammunition can be brought by carrier. At the completion of his reconnaissance, the platoon leader meets his section leaders and issues his attack order.

b. Section leaders. Having received the platoon leader's order, each section leader precedes his section to the position area. There he notes the location of front-line troops, locates his targets or target area, selects an observation post for the section, and selects general locations for his weapons. He also selects cover positions, and directs the movement of the squads and their weapons from off-carrier positions to the cover positions.

9. SELECTION OF FIRING POSITIONS. *a. 60-mm mortar section.* Positions for the 60-mm mortars should be selected to provide full defilade for the mortar and crew. Observers must be close behind or with front-line rifle elements. Sound-powered telephone or radio telephone equipment is secured from company headquarters to relay corrections and sensings to the mortars when this equipment is necessary. If the use of electrical communication equipment is impractical, mortar positions must of necessity be within arm-and-hand or voice signaling distance of the observers.

b. 57-mm gun section. (1) Positions selected for the 57-mm recoilless rifles must have adequate fields of fire, cover nearby for the squad, and covered routes to and from the position. Concealment or camouflage should be available for the weapon and its crew. (It is also desirable that there is a mask to conceal the back blast.) The rifle should be located far enough away from other troops so that they will not receive casualties from fire directed upon it, yet near enough to them so that the crew will be protected by other units.

(2) Because it is difficult to conceal the weapon after it opens fire, alternate and supplementary positions should be prepared. *Normally, only one fire mission should be accomplished from a position before displacing to a new position.*

10. ORDERS. *a. Platoon leader.* The amount of detail in the platoon leader's order will vary with the situation. He should include as much of the following as his noncommissioned officers need to carry out their missions:

(1) Information of the enemy and friendly troops, including what the leading rifle platoons are going to do and positions of the heavy weapons company machine guns and mortars.

(2) Attachments, if any, to rifle platoons.

(3) Detachments, if any, to direct control of the company commander.

(4) Missions of the sections, to include:

(a) Initial position areas and, where necessary, the route or unit to be followed to them.

(b) Initial targets or sectors of fire.

(c) Time of opening fire.

(d) Subsequent action.

(5) Instructions concerning ammunition supply.

(6) Location of the battalion aid station, and any other administrative instructions.

(7) Instructions concerning signal communication, including prearranged signals.

(8) Location of the platoon leader and company commander.

b. Section and squad leaders. (1) Section leaders promptly notify any squad leader whose squad is attached to a rifle unit. Attack orders of section leaders to squad leaders remaining under their command include:

(a) Necessary information of the enemy and friendly troops.

(b) Mission(s) of the section.

(c) General location of each squad's firing position and any instructions concerning movement to it.

(d) Each squad's target(s) or sector of fire.

(e) Any restrictions on the opening or conduct of fire.

(f) Instructions concerning ammunition supply.

(g) Prearranged signals, if any.

(h) Location of the battalion aid station, section and platoon leaders, and the company commander.

(2) Each squad leader includes in his attack order all items of the section leader's order which pertain to his squad or its members. After the initial firing position has been occupied, he issues the fire order for engaging the first target.

c. Fragmentary orders. Leaders frequently issue their attack orders in fragmentary form. This is particularly the case when all or part of the unit is initially to follow a rifle element of the company. Such items as the location of firing positions, targets, or sectors of fire, are then frequently not issued until reaching the vicinity of the first firing position.

11. MOVEMENT INTO FIRING POSITION. *a.* Covered positions affording protection for men not firing are selected near the weapon positions. Weapons and an initial supply of ammunition are removed from carriers and placed at an off-carrier position. From here they are moved by hand to the cover positions.

b. Upon receiving the platoon leader's order, each squad leader conducts his squad to the assigned position area, selects the exact position for his gun or mortar, and supervises occupation of the firing positions. Here he issues his fire commands.

12. ATTACK. *a. 60-mm mortar section.* During the attack, section and squad leaders must have their mortars always prepared to fire on targets assigned by the company commander or platoon leader. Squad leaders are particularly alert to engage targets which are too close to friendly troops to permit artillery or 81-mm mortar fire against them.

b. 57-mm gun section. Normally, all of the 57-mm rifles are kept together and fired as a battery if firing positions are available which enable the section to cover the entire company zone of action. Otherwise, squads are attached to rifle platoons, thus providing close support and insuring that the entire company zone is covered.

13. DISPLACEMENT. When the section can no longer perform its mission from a firing position, it is displaced to

a new position. Fire support must be interrupted as little as possible during the move. The section may move forward as a unit during a lull in the fighting, or when continuous support is not required. Otherwise, one squad displaces while the other squads remain in place. When displacing by squads, the section or squad leader goes forward with the first squad to select the new positions. He prescribes the time the rear echelon will displace, or signals it forward. When the section advances as a unit, the leader goes ahead with a messenger. He locates the general position area, selects a covered position nearby, then has the unit move forward.

14. SUPPORTING FIRES DURING ASSAULT. When the advance of the assaulting rifle platoons masks their supporting fires, sections shift fires as follows:

a. 60-mm mortars to suitable targets in adjacent or rearward enemy positions which open fire on the assaulting riflemen.

b. 57-mm rifles to suitable targets in adjacent or rearward enemy positions which open fire on the assaulting riflemen.

15. REORGANIZATION. Section weapons protect the front and flanks of the leading rifle platoons against counterattack during their reorganization. Section leaders replace squad leaders and key men who have become casualties, and report their strength and ammunition requirements to the platoon leader. If detached from the platoon, this report is made to the company commander. Platoon and section leaders promptly reconnoiter for positions to support the attack if it is continued.

16. DEFENSE. *a. 60-mm mortars.* The mission of the 60-mm mortars is fourfold:

(1) To provide close support to the forward defense areas by placing fires in front of any portion of the company area, particularly in defiladed areas, in order to break up the hostile attack before it reaches the battle position.

(2) To fill with fire, small gaps in the final protective fires.

(3) To assist in limiting by fire, enemy penetrations of the main line of resistance.

(4) To fire in support of friendly counterattacks. The company commander designates the general firing positions and barrages (final protective fires) for the mortars. The mortars are normally emplaced by section in battery under company control. Observers will be located in each front-line platoon with direct communication to the section. The firing position is normally in the vicinity of the support platoon. This method of employment provides several advantages. It permits coverage of a wider sector, more rapid shifting and massing of fires, centralized control, and ease of supply. A disadvantage is that observers and gunners may be so widely separated that communication may become difficult. When the communication facilities between battery position and observers are not adequate to insure full and prompt coverage of the company front, the section may be divided and guns located within the front-line platoon areas.

b. 57-mm gun section. The missions of the 57-mm rifles of a front-line rifle comapny are to destroy enemy crew-served weapons, mechanized vehicles, or grouped personnel by direct fire. Usually the mission and general location of each 57-mm rifle is assigned by the company commander. The section will normally have two squads in the front-line platoon defense areas to give close support to the main line of resistance, and the third squad in the support platoon area.

17. SELECTION OF FIRING POSITIONS. *a. 60-mm mortars.* Positions must provide cover, and enable the section to accomplish its mission. Observation over the entire company front is essential. Firing positions should be protected by the rifle platoon defense areas. Ammunition bearers armed with carbines provide close protection.

b. 57-mm rifles. (1) Under control of the company commander, direct firing positions for the 57-mm rifles are selected which have as many as possible of the following characteristics:

(a) Adequate fields of fire.

(b) Suitable cover positions in the immediate vicinity.

(c) Covered routes to and from the position.

(d) Sufficient natural concealment or possibility of camouflage to keep the weapon and its crew concealed until fire is opened.

(e) Freedom from dust.

(f) Mask to conceal blast.

(g) Sufficient distance from other troops to prevent heavy losses of personnel due to retaliatory fire.

(h) Sufficient proximity to other troops to permit protection of the crew by other weapons.

(2) Due to the difficulty of concealing the weapon after opening fire, alternate and supplementary positions should be selected. When practical, not more than one fire mission should be accomplished from any one position before displacing.

18. SECTORS OF FIRE AND TARGET AREAS. Each 60-mm mortar squad is assigned a sector of fire, one barrage, and any number of concentrations. The company commander assigns barrages. The platoon leader assigns concentrations and sectors of fire in accordance with the company plan of defense. Rifle platoon leaders assign these for mortar squads attached to their platoons. Target areas should not be more than about 50 by 50 yards. The 57-mm gun squads are assigned primary and secondary missions in accordance with the company defense plan.

19. ORDERS. *a.* The platoon or section leader's order may include—

(1) Essential information of the enemy.

(2) Location of the main line of resistance and security forces.

(3) Primary and alternate firing positions.

(4) Sectors of fire; barrages and concentrations for all mortars; missions for 57-mm rifles.

(5) Supplementary firing positions (if any) and missions to be fired.

(6) Organization of the ground, including the type of emplacements to be constructed.

(7) Instructions concerning ammunition supply.

(8) Instructions for opening fire.

(9) Instructions for fires on final protective lines and on primary target areas, including—signal for this fire, location from which signal will be given, rate, and duration of fire.

(10) Location of battalion aid station.

(11) Location of company and platoon command posts and of section leaders.

b. The squad leader bases his order on that of the section or platoon leader. He indicates the exact spot on which the gun or mortar is to be mounted and prepares the positions for defense.

20. OCCUPATION AND ORGANIZATION OF FIRING POSITIONS. *a. Arrival at position.* Upon arriving at the firing position, each mortar and 57-mm rifle is mounted and all weapons are concealed and camouflaged in an emergency firing position prepared to open fire at once and to cover its assigned sector of fire.

b. 60-mm mortar section. As soon as the mortars are mounted in temporary positions, the actual positions are constructed, camouflaged, and stocked with ammunition. Range cards are prepared; one copy of each card is given to the officer directing the fire. The platoon leader also gives the company commander a sketch showing the prepared mortar fires.

c. 57-mm gun section. Primary, alternate, and supplementary positions are prepared and camouflaged. Ammunition is brought forward.

21. POSITION OF LEADERS. *a. Platoon.* The platoon leader takes position where he can best observe and control the units of his platoon. His position should permit easy communication with the company commander.

b. Section. During combat, section leaders select a position from which they can best observe the section sector of fire and control their squads. When two or more mortars or 57-mm rifles are grouped together, the section leader usually remains with this group.

c. Squad. In combat the mortar squad leader is the observer. He locates his observation post near, or within easy signaling distance of, the commander controlling the fire of his mortar. The squad leaders of the 57-mm rifle squads

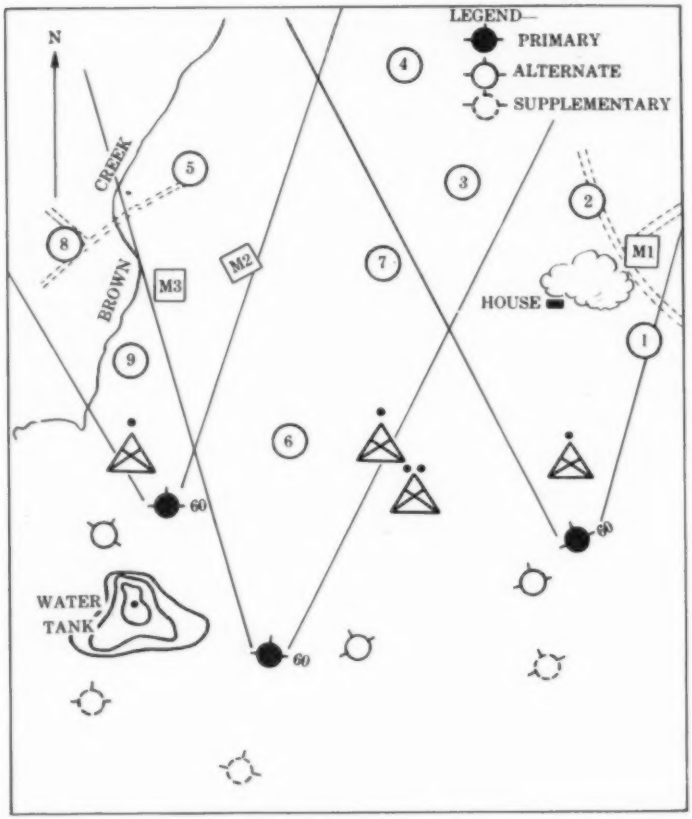


Figure 3. Schematic diagram of prepared mortar fires (defense).

place themselves close to the weapons position. They supervise the action of the gun crew and the ammunition handlers.

22. CONDUCT OF THE DEFENSE. *a. 60-mm mortars.* When not firing on other targets, mortars are laid to fire on that area where the situation indicates suitable targets are most likely to appear. If the enemy succeeds in driving back all security echelons forward of the battle position, the mortars will be laid on their assigned barrages except when firing other missions. The rate and duration of barrage fire will be prescribed by higher headquarters. When final protective fires are called for during periods of reduced visibility, only those mortars open fire whose barrage areas are in support of the area calling for such fire. When the ammunition supply is ample, squad and section leaders may take favorable targets of opportunity under fire.

b. 57-mm rifles. Fire of the 57-mm rifles is directed at targets which present a definite threat to the forward defense areas. These weapons are assigned principal directions of fire, but are also required to engage any remunerative target in front of the position. Antimechanized missions prescribed by the company commander are carried out upon his order or when the position is threatened by enemy armored vehicles and likey to be overrun.

23. NIGHT EMPLOYMENT. The mortar squad and section prepare and record fire data during daylight. They fire for adjustment when permitted. The 57-mm rifles are seldom employed at night except for prearranged fires.

24. WITHDRAWAL. *a. Night.* In a night withdrawal, one or two 60-mm mortars and a 57-mm rifle may be left in position with the company covering force. Two men stay with each weapon. Carriers should be close by to withdraw these men and weapons. The rest of the weapons platoon withdraws with the company.

b. Daylight. (1) During a daylight withdrawal, mortar squads are usually attached to rifle platoons and withdraw as the rifle platoon leader orders. When employed as a section, the withdrawal is directed by the weapons platoon leader.

(2) During a daylight withdrawal, the 57-mm gun section is held under company control to provide antimechanized defense and to fire on other suitable remunerative targets.

(a) When the company withdraws by platoon, the 57-mm gun section may be withdrawn first to positions from which it can protect the flanks of the withdrawing rifle platoon from hostile mechanized attack.

(b) When the company withdraws by thinning from all platoons, the 57-mm gun section may be held to cover the entire company front from mechanized attack. In this event, it accompanies the last of the rifle elements to leave the position.

Logistics of Aerial Supply

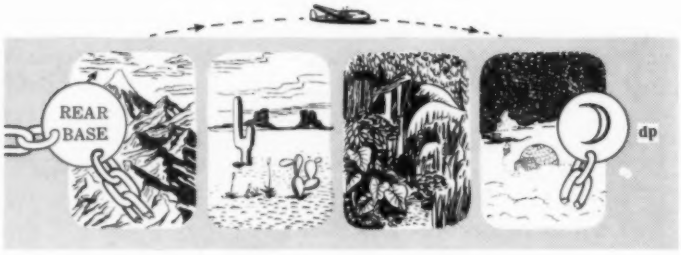
Students of logistics must accept the fact that transportation of troops and supplies by air is destined to play a role of ever increasing importance in future combat operations. Further, they must be willing to accept air transportation as a *normal means*, in the same category as transportation by water, rail, or motor. This mental adjustment, however, does not introduce any new factors in the equation of supply; time and space will continue to be the controlling factors which determine whether a particular operation can be successfully conducted.

Use of the airplane for supply and troop movement however, does enlarge the horizon of staff planners. Time and space factors are obviously affected to a large degree since the speed of air transport is many times greater than other methods; likewise, operations can be conducted over a greatly extended area if a sufficient number of cargo planes are available for use between the zone of the interior and the combat zone.

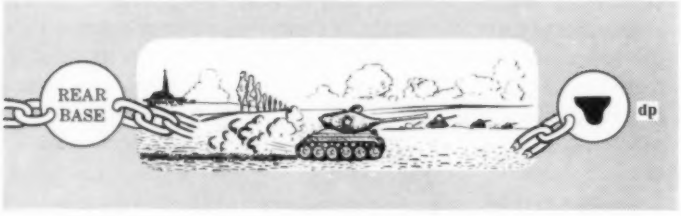
Supply principles and doctrine are unaffected by the mode of transportation used. In an airtransported operation, for instance, supply by air is considered the normal means until such a time as supply by land or water can be established. In a ground operation, supply by air will be considered the normal means when either the terrain or enemy action causes a break in the established supply chain (figure 1).

Regardless of the method of transportation utilized, supply remains a command responsibility which cannot be delegated. When the airplane is used as a supply vehicle, responsibilities of the air and ground commanders must be clearly defined and established. Coordination and liaison must be of the highest order.

SUPPLY BY AIR CLOSES THE BREAK IN THE NORMAL CHAIN OF SUPPLY



MOUNTAINS, DESERT, JUNGLE, DEEP SNOW



DISTANCE

ENEMY ACTION

Figure 1.

The first responsibility of the ground commander is to make his requirements known to higher headquarters prior to the commitment of his force. These requirements should state the amount and type of supplies needed as well as items of special equipment and material, so that the proper items can be assembled and delivered to the air force for transportation.

Higher headquarters must assemble, through its service agencies, the necessary supplies and equipment at the designated airbases or concentration areas. The next higher headquarters of the requesting unit may not be able to accomplish this, and if not, must forward the request through channels until it reaches a headquarters that can assemble the supplies at the designated locations.

The U. S. Air Force is responsible for the delivery by air transport of all classes of supplies and equipment required by the using unit. To accomplish their mission, exact information as to what is needed and the location for delivery must be submitted.

The Air Force has service organizations designated as Air Cargo Resupply Squadrons which have the mission of receiving, packaging, and storing all classes of supplies arriving at designated points, for delivery to final destination by air. This organization distributes and moves the supplies to airplane take-off points, loads aircraft, and in exceptional cases, assists in unloading air cargo from airplanes in flight. These units are available for the express purpose of loading aircraft with supplies for ground units who cannot, because of the nature of the operation, do it themselves.

The ground force units making an airborne or airtransported operation will load the aircraft with both personnel and equipment as well as the supplies carried in the initial operation. Details of this loading operation are clearly illustrated in the chapter entitled "Movement of Troops By Air" in Volume XXX, THE MAILING LIST; and in the chapter entitled "Supply By Air" in the INFANTRY SCHOOL QUARTERLY, July 1947.

AIR SUPPLY CHANNELS

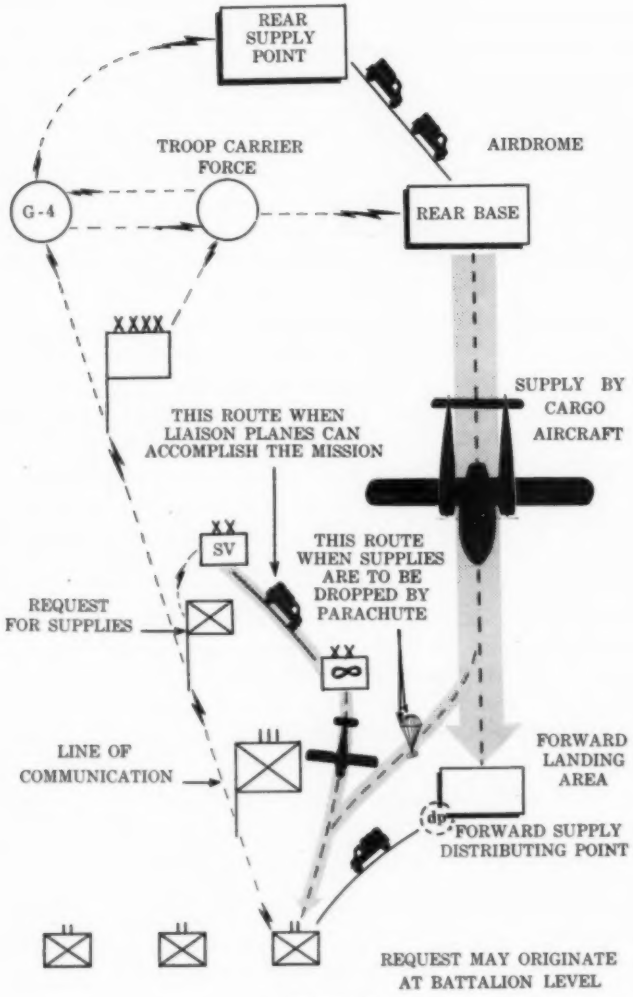


Figure 2.

The ground force commander at the arrival airbase or forward landing area must unload, receive, and distribute the supplies within his combat area. Plans must be made to have sufficient personnel and vehicles available at the forward landing area to handle the unloading of supplies and to place them in dumps taking full advantage of dispersion to reduce the value of this vital area as an enemy target.

To clarify the supply responsibility of a unit commander, assume that an infantry battalion has been cut off from the normal chain of supply by either terrain, distance, or enemy activity. In order for the battalion commander to obtain aerial supply for his command, the following information must be submitted by radio or wire to the next higher headquarters, in this case the regimental commander.

(1) The situation of the troops to be supplied.

(2) The enemy situation, disposition, and activity.

(3) Amount and class of supplies that are required to permit operations until normal supply is again effected.

(4) The exact location of friendly troops on the ground and the definite area in which supplies are to be dropped or landed.

(5) The prearranged signal plan to be followed for mutual identification and recognition. (The plan can be obtained for the supply mission from the current SOI available within the battalion.)

(6) The tactical plan pending further orders.

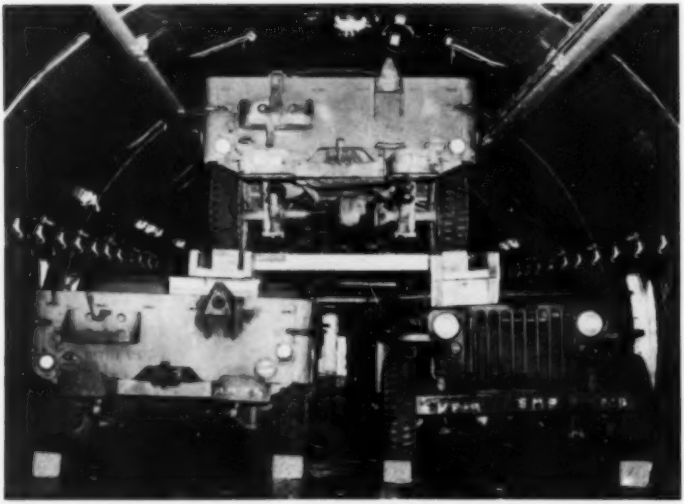
In addition to the above information, the battalion commander's plan must include provisions for receiving and distributing the supplies within his area.

If the supply request can be handled by the liaison type airplanes authorized by current TO/E for the regiment and division (17 per division), then the supply mission will be accomplished by these units; however, if the supply request contains considerable amounts of any or all classes of supply, the request will be transmitted to the army headquarters.

Coordination at army level is performed by the army G-4 who will coordinate with the army service agency for the

procurement of the needed supplies, and make arrangements for delivery to the departure airdrome or rear base. The army G-3 Air will coordinate the request with the tactical air force and obtain information as to the number and type of aircraft available for the mission and the location of the departure airdrome or rear base.

The actual packaging and loading of the supplies is accomplished by personnel of the air cargo resupply squadron located in the vicinity of the designated base.



Air Material Command Photo

Figure 3. Measuring 12½ feet from floor to ceiling, the cargo space in the C-74 Globemaster is higher than the average freight car. As the plane does not have decks, the entire space can be filled with cargo.

In making an airtransported operation the following echelons of supply are necessary to insure combat loading and continuity of supply:

Combat unit load. The supplies included in the combat unit load can best be described as the initial issue of equipment and supplies plus the individual reserve rations and extra ammunition for the individual and crew-served weapons. This is normally the minimum amount required

to initiate and maintain combat until the basic load is discharged and available for issue.

Basic load. The basic load consists of additional supplies

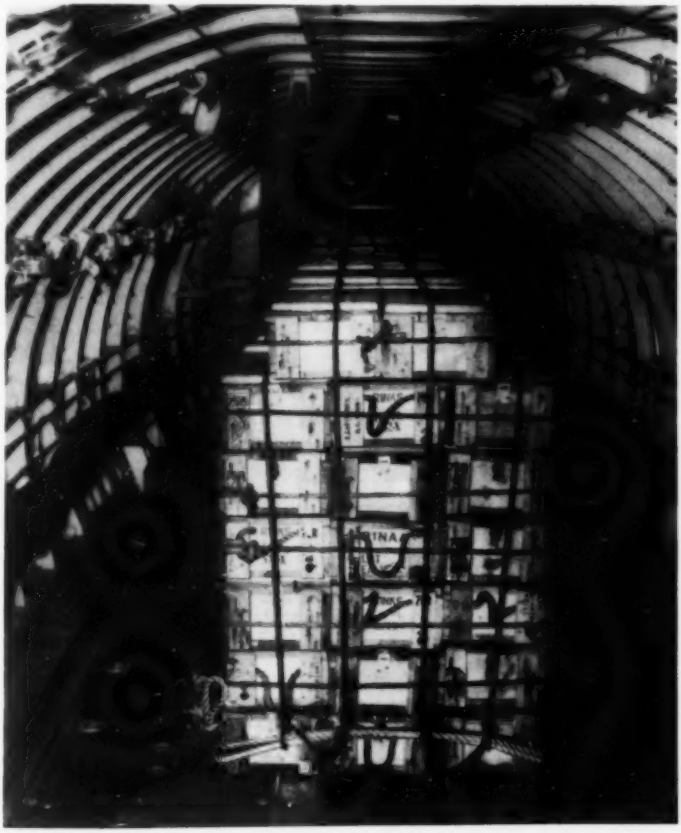


Figure 4. Five tons of small-arms ammunition loaded and lashed in C-46 Commando aircraft for an airlanded supply operation.

of all classes to supplement the combat unit load in sufficient quantity to maintain operations until the resupply load can be effected. The weight carrying capacity of aircraft is not consumed by vehicles and equipment due to the bulk

displacement, thus permitting the loading of a greater bulk of supplies. The combat unit load and the basic load supplies can be compared to the prescribed load carried by infantry units.

Resupply load. The resupply load consists of prescribed levels of all classes of supply to insure continuity of supply until normal ground supply can be effected. Depending upon the tactical situation, from one to three days level of all classes of supplies are included in this load. Depending upon the availability of cargo aircraft, the resupply load can either accompany the airtransported unit or be delivered at a later specified time.

Land tail.[1] The land tail consists of heavy equipment such as tanks and similar equipment as well as low priority equipment and from one to two days level of all classes of supply for the force. The size of the land tail or the equipment and personnel of the unit that cannot be airtransported depends upon the type and number of aircraft available for the operation.

In addition to the four echelons of supply just discussed, predetermined amounts of supplies, based upon the type of operation, may be flown in to the airhead or forward landing area in accordance with prearranged schedules included in the air movement table. Such supplies are termed "on call supply" and as the name implies, are readily available if needed. Emergency supply can be effected rapidly in this manner.

The following problem involving practical work is representative of certain difficulties that confront the commander and his S-4 in the planning and execution of aerial supply missions. Sufficient data is furnished so that the reader can work out the solution to the air supply mission.

[1]Currently developed C-97 and C-74 cargo airplanes may materially reduce the size of the land tail of an organization when moving by air as this type of cargo plane is capable of carrying all the equipment of an infantry division. These large cargo and troop transport airplanes will play a major part in transportation during future combat operations and it is possible to conceive of supplies being delivered to units engaged in combat by rockets, as well as conventional types of aircraft.

PART II

AERIAL SUPPLY AND RESUPPLY PLANNING

1. REFERENCES: FM 31-40; FM 101-10; INFANTRY SCHOOL QUARTERLY, July 1947; THE MAILING LIST, Vol. XXX.

2. GENERAL SITUATION:

a. Maps: See Sketch "A" Operation *Bulldog*.

b. Red Forces have made an amphibious landing in force on the east coast of FLORIDA, and advancing rapidly inland, have reached a general north-south line approximately 17 miles east of ORLANDO, FLORIDA.

c. G-2 estimates that the Red Force consists of one corps reinforced with supporting amphibious service troops and equipment.

d. The Blue Third Army has two airborne divisions opposing the Red Forces. The Blue II Corps has been directed to send the Blue 1st Infantry Division by air to reinforce the Blue Forces.

e. The Blue Air Force has air superiority.

3. SPECIAL SITUATION:

a. On 9 August, the commanding general, Blue 1st Infantry Division, now stationed at FORT BENNING, GEORGIA, directed the commanding officer, 1st Combat Team (CT 1), to be prepared, on 48 hours notice, to transport his unit by air to ORLANDO, FLORIDA.

b. Cargo and transport type aircraft are available at LAWSON and DECKER airfields to transport the combat team and its supplies to the "A" and "B" airstrips at destination (see operations sketch).

c. Upon completion of a staff conference with the commanding officer, CT 1, the S-4 procured for resupply purposes, an allotment of aircraft possessing load capacities as indicated:

3rd lift—34 C-46 aircraft—capacity 11,500 lbs each.
4th lift—65 C-82 aircraft—capacity 11,000 lbs each.

Total lift for supply (resupply load)—1,106,000 lbs or 553.0 tons.

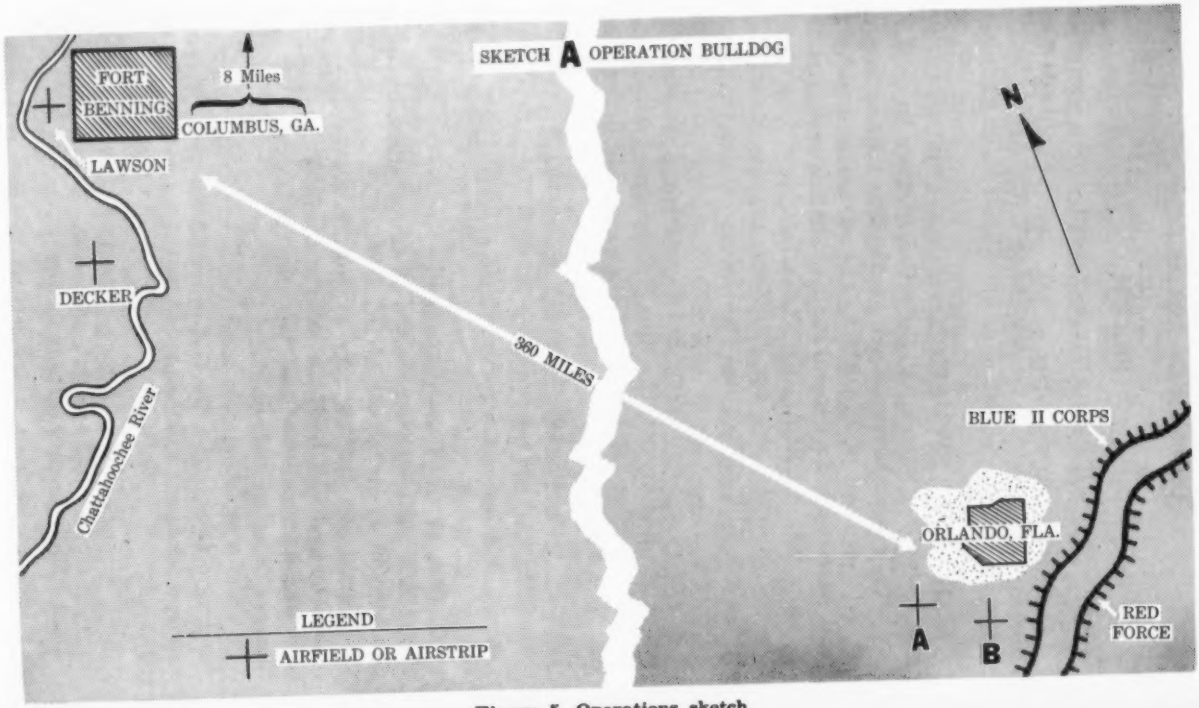


Figure 5. Operations sketch

d. Supply installations of the Third Army are in the vicinity of COLUMBUS, and FORT BENNING, GEORGIA.

e. One company of an air cargo resupply squadron has been made available at LAWSON and DECKER airfields to perform the actual packaging of the supplies and the loading of the aircraft.

4. SITUATION CONTINUED AS OF 0800 HOURS, 10 AUGUST:

a. Commanding officer, CT-1, received orders directing the movement of the combat team together with supplies, effective 0800 hours, 12 August.

b. Based on staff planning, the C-82 aircraft will load at the DECKER airfield and will unload at the ORLANDO "A" strip, carrying the artillery battalion and the engineer company as well as other personnel of the combat team and their supplies and equipment. S-4, CT 1, requested that all of the artillery ammunition, as well as engineer Class IV supplies, be transported by the C-82 aircraft and requested that division deliver these supplies to the vicinity of the DECKER airstrip from the Third Army supply installations.

Supplies as required for the C-46 aircraft will be delivered to the vicinity of LAWSON airfield as soon as possible. These aircraft will unload at ORLANDO "B" airstrip.

c. From a map reconnaissance, tentative areas were chosen for the supply installations in the vicinity of ORLANDO. The service company commander and his warrant officer assistant were assigned the mission of establishing these installations.

They are to be assisted by the assistant G-4, 1st Infantry Division, who has been made available to the commanding officer, CT 1.

d. The operation order, code name *Bulldog*, states that the Heavy Tank Company, 1st Infantry, will be rearmed with 75-mm rifles (recoilless) to augment antitank defenses in the combat area. The tanks of the unit will proceed to ORLANDO with the overland echelon or land tail of CT 1. The 75-mm rifles, as special equipment, replace the

armor for the initial phase of the operation on the basis of one for one. The land tail will contain all of the heavy or low priority T/E equipment of CT 1. Estimated time of arrival at ORLANDO, 15 August.

e. The 1st Infantry Division Administrative Order to accompany Operations Order *Bulldog* has been received by the CT commander, extracts from which follow:

1. *Initial Supply.* Units will enter combat with TO/E (full Tables of Organization and Equipment) except as modified in the operations order, and together with the following combat unit load:

a. Class I.

(1) 1-1/3 K rations per individual (on individual).

(2) 1 full canteen of water per individual.

(3) 1 full 5-gallon can of water per airplane and glider for consumption enroute.

(4) 1 bottle of 50 halazone tablets per individual. (Consider all water from ground sources nonpotable until treated.)

b. Class III.

(1) All vehicle tanks filled.

(2) Reserve:

¼-ton truck—1 5-gallon can of gasoline.
¾-ton truck—2 5-gallon cans of gasoline.
1½-ton truck—2 5-gallon cans of gasoline.
2½-ton or over truck—3 5-gallon cans of gasoline.
All vehicles—5 quarts engine oil and filled grease guns.

c. Class II and IV.

As prescribed by the unit commander.

d. Class V.

Complete basic load of ammunition for all units. (Ammunition for the special 75-mm rifles will be based upon the standard basic load for the weapon.)

e. Miscellaneous Items.

(1) One week's supply of gratuitous issue of army exchange supplies for personnel of all echelons will be carried on the land tail.

(2) Following items carried on individuals as indicated:

2 3-ounce heat units per individual.
1 1½-ounce can insecticide per individual.

2. *Resupply by air*: *a.* Three days of supply all classes, except class V.

(1) Class I:

3 days supply of type "K" rations.

(2) Class II and IV:

2 per cent per day maintenance based upon entire command. Total weight Classes II and IV equals 24,470 lbs (three days supply).

(3) Class III:

(a) Predicted expenditure, 6000 gallons gasoline for a three day level.

(b) Motor oil on the basis of 3 per cent of total gallons of gasoline.

(4) Class V:

(a) Two units of fire, all weapons, except artillery.

(b) Two and one half units of fire for 105-mm artillery.

(5) Request for *on call* resupply will be submitted by CT 1 direct to the 1st Infantry Division by radio.

3. *Supply by overland tail.* Two days of supply, all classes, will be carried by the overland tail of CT 1. These supplies will be loaded prior to the operation.

4. *Evacuation.* Casualties—normal. Casualties will be loaded on returning aircraft by a platoon of the medical company for evacuation to the rear.

5. *Recovery and maintenance.* Immediate and vigorous action will be taken to salvage air force and organic equipment and material. Unserviceable material will be evacuated to a designated collecting point. Captured enemy material will be reported to the S-2, CT 1 prior to evacuation.

6. *Reports.* See Standing Operating Procedure.

5. REQUIREMENT.

a. As S-4, CT 1, 1st Infantry Division, compute the tonnage of each class of supply required in the resupply by air echelon as shown in the extract from the division administrative order.

b. Will the 34 sorties of C-46 aircraft, and the 65 sorties of C-82 aircraft, be sufficient for the transportation of the supplies?

c. The land tail of CT 1 will carry the following Class I supplies for the entire combat team: One C-type ration and one 10-in-1 type ration. Compute the number of boxes of each that must be loaded prior to departure for ORLANDO.

NOTE: The following data is furnished to assist in the computation of the first requirement.

1. *Strength.* For problem purposes, consider that the personnel strength of CT 1, 1st Infantry Division, is 4512 officers and enlisted men.

2. *Composition of CT 1, 1st Infantry Division.*

a. 1st Infantry Regiment.

b. 10th Field Artillery Battalion (6-gun howitzer battery total 18 pieces).

c. Company, 1st Engineer (C) Battalion.

3. *Class II and IV Supplies.* For problem purposes, consider that the requirements for a three day supply of Class II and IV supplies will be 24,470 lbs.

4. *Ammunition.* (One unit of fire.)

a. Infantry Battalion (each)	tons	22.824
b. Regimental HQ Company (AT Mine Plat)	tons	6.057
c. Heavy Mortar Company (12-4.2-in. Mort)	tons	12.663
d. Heavy Tank Company (Prov. 22—75-mm Rifle)	tons	22.500
e. Engineer Company (C)	tons	4.000
f. Artillery Battalion (18—105-mm How)	tons	103.200

5. *Rations.*

a. K-type rations—12 individual rations per box—weight 43 lbs.

b. C-type rations—8 individual rations per box—weight 45 lbs.

c. 10-in-1 rations—10 individual rations per box—weight 45 lbs.

6. *Class III Supplies:*

a. Gasoline: Packaged in 5-gal cans—weight 50 lbs per can.

b. Oil: Packaged in 5-gal cans—weight 50 lbs per can. (Oil requirements are based upon 3 per cent of total gasoline requirements.)

6. A SOLUTION TO THE REQUIREMENT:

a. The S-4, CT 1, computed the tonnage for each class of supply based upon the division administrative order as follows:

(1) Class I (rations):

Total strength of personnel—4512 × 3 days supply = 13,536 rations. K-type rations packed 12 per box = 1,128 boxes of K rations. 1,128 boxes rations × 43 lbs per box = 48,504 lbs.

TOTAL TONNAGE CLASS I (48,504 ÷ 2000).... 24.252

(Water is available at the airhead and since the personnel are issued halazone tablets to purify the water, it is not necessary to deliver it by air.)

(2) Classes II and IV (clothing, equipment, etc.) 3 day level:

Quartermaster: Clothing and equipment	lbs	6,000
Ordnance: Spare weapons and equipment	lbs	3,970
Signal: Radios, batteries, wire, etc	lbs	6,000
Engineer: Fortification materials, etc	lbs	6,000

Medical: Drugs, bandages, splints, etc.....lbs 2,500
Total weight of all Class II and IV Supplies .....lbs 24,470
TOTAL TONNAGE (24,470 ÷ 2000).....12.235

(3) Class III (gasoline and oil):

(a) Gasoline: estimated expenditure .....6,000 gal.
6,000 ÷ 5 = 1,200 cans of gasoline.
1,200 cans of gasoline × 50 lbs per can = 60,000 lbs. or 30 tons.

(b) Oil 3% of 6,000 (gallons of gasoline) = 180 gallons of oil.
36 cans of oil × 50 lbs per can = 1,800 lbs or approximately 1 ton.
TOTAL TONNAGE OF GASOLINE AND OIL....31.000

(4) Class V (Ammunition)—units of fire.

(a) Infantry regiment.
3 Infantry battalions: 22.824 tons × 3....tons 68.472
Regimental HQ Company (AT Mine Plat) .....tons 6.057
Heavy Mortar Company (12—4.2-in Mortars) ..... tons 12.633
Heavy Tank Company (Provisional).....tons 22.500
Total tonnage of entire regiment: For one unit of fire.....tons 109.662
Two units = 109.662 × 2 = 219.324 tons.

(b) Artillery battalion: 18—105-mm howitzers.
200 rds per weapon × 18 howitzers per battalion = 3,600 rounds.
3 rds per bundle = 1,200 bundles × 172 lbs = 206,400 lbs. 206,400 lbs ÷ 2,000 lbs = 103.200 tons.
Two and one half units of fire = 103.200 × 2½ = 258.000 tons.

(c) Engineer combat company:
One unit of fire.....tons 4.000
Two units of fire (4 × 2) .....tons 8.000

(d) TOTAL TONNAGE CLASS V SUPPLY.....485.324

(e) Total tonnage of supplies to be air transported:

Class I	24.252
Class II and IV	12.235
Class III	31.000
Class V	485.324
GRAND TOTAL TONNAGE TO BE TRANSPORTED	552.811

b. The sorties as listed in the aircraft allotment table as planned by the S-4 will be sufficient for the transportation of the supplies as required in the resupply by air echelon of the administrative order:

34 sorties C-46 aircraft @ 11,500 lbs each = 391,000 lbs or 195.500 tons.

65 sorties C-82 aircraft @ 11,000 lbs each = 715,000 lbs or 357.500 tons.

TOTAL TONNAGE CAPACITY OF ALL SORTIES	tons 553.000

c. The following number of boxes of each type ration will be carried by the land tail of CT 1, 1st Infantry Division.

(1) C type rations: 1 day supply—4,512 rations packed 8 rations per box = 564 boxes required.

(2) 10-in-1 rations: 1 day supply—4,512 rations packed 10 rations per box = 452 boxes required.

7. ORGANIZATION OF THE LAND TAIL. *a.* After the S-4, CT 1, 1st Infantry Division has determined the tonnage of supplies and equipment to accompany the part of the combat team that is being airtransported to ORLANDO, he must organize the land tail that will travel overland and join the air transported echelon at ORLANDO, FLORIDA.

b. Since the land tail consists of the twenty M-26 Tanks and two M-45 Tanks as well as the other heavy equipment and vehicles of the combat team that are not airtransported, the S-4 must supervise the spread loading of two days of supply, all classes, on these vehicles as prescribed in the administrative order. The requirements for Class I and Class III supplies to be consumed enroute must be determined and loaded accordingly. In addition, coordination must be made with the S-3 to determine the route that the land tail will follow to the airhead.

c. Upon arrival of the land tail, CT 1, the S-4 must consolidate the supplies of both echelons of the combat team to simplify distribution to the subordinate units.

d. In the event the normal supply chain remains broken, the S-4 must scrutinize the inventory of supplies of each class to insure continuity of supply for his organization and request *on call* supply missions until the ground supply channels are functioning.

8. SUMMARY. Airtransported operations will play a major role in the event of future combat operations thus permitting the employment of assault forces in highly centralized industrial areas of the enemy. Supply by air will permit the assault forces that have been airtransported to secure relatively small airheads, as compared to major operations during World War II, and eliminate to a great extent, the large areas occupied by the communications zone. It is even conceivable that, due to recent developments in cargo aircraft, supply depots may remain in the zone of interior and delivery of the bulk of supplies be made by air to the airtransported forces, direct from the zone of interior.

Personnel Adjustment

Psychiatric disorders can actually become a serious menace to the nation in time of crisis. This fact became vividly evident in the year 1943, when the General Staff noted, with understandable consternation, that *as many men were being discharged from the Army as were entering it thru induction stations.* It is significant that up to this time we had not engaged in major operations in Normandy and the Southwest Pacific and thus our battle casualty rates were low; *the majority of discharges were given to individuals who had failed to make a satisfactory adjustment to Army life.*

On a lower scale, this same fact was brought home to many company commanders with startling clarity in the heat of battle—when it was much too late to do anything about it. When preparing to launch an attack it was suddenly realized that although battle casualties had been comparatively light, the unit was only about 50 percent up to strength. Hurried conversations with subordinates exposed the fact that many men were back in the rear with "battle fatigue." Others, just short of this combat misnomer, were lying around in a rest area. The same men who rode the sick book through basic training had suddenly come down with some vague ailment of the back or head which required hospitalization. As a result, only half of the team was on the field when the battle began.

Which of these losses were due to psychiatric disorders? Probably all of them, as this term applies not only to the truly insane which must be committed to institutions, but also to such other conditions as psychoneurosis, psychopathic personalities, mental deficiencies, and neurological diseases.

Psychiatric disorders were the biggest cause of the loss of manpower in the Army (see Chart 1). Approximately 1,850,000 men were rejected for military service by the induction stations during the years 1942-1945. One out of every eight individuals who presented himself for induction was rejected outright because the doctors felt that he could not possibly adjust to Army life. The total rejected constituted 12 percent of the total number of men examined during the period and about 38 percent of the total number of rejections for all causes. This is only the beginning of a sad picture! In spite of careful screening at the induction centers, *1,000,000 men who were inducted and believed capable of making a satisfactory adjustment to Army life were later admitted to Army hospitals for psychiatric disorders.* Of these, about 380,000 were discharged. In addition, approximately 163,000 were separated from the service under the provisions of AR 615-368 and AR 615-369 (inaptness, lack of adaptability, etc.). Add to this figure some 72,000 general prisoners whose behavior stemmed from psychiatric disorders, and it becomes apparent that a serious drain in manpower resulted from mental disorders.

This statistical barrage can be concluded with another startling fact. Fifty percent of all mental breakdowns occurred within 30 days after induction and 85 percent occurred within 6 months after the individual entered military life! Thus it appears that most of those individuals who became maladjusted did so without having heard a shot fired in anger.

The responsibility for the prevention of mental ill health in the command, as in the case of physical ill health, *lies with the unit commander.* (It is true that he cannot do this alone, and in a subsequent article the individuals and agencies who are available to assist him in his fight against maladjustments will be discussed.) It might be well for officers to remember that cases of maladjustment stem from poor leadership and that the number of cases in a given unit reflects the brand of leadership displayed.

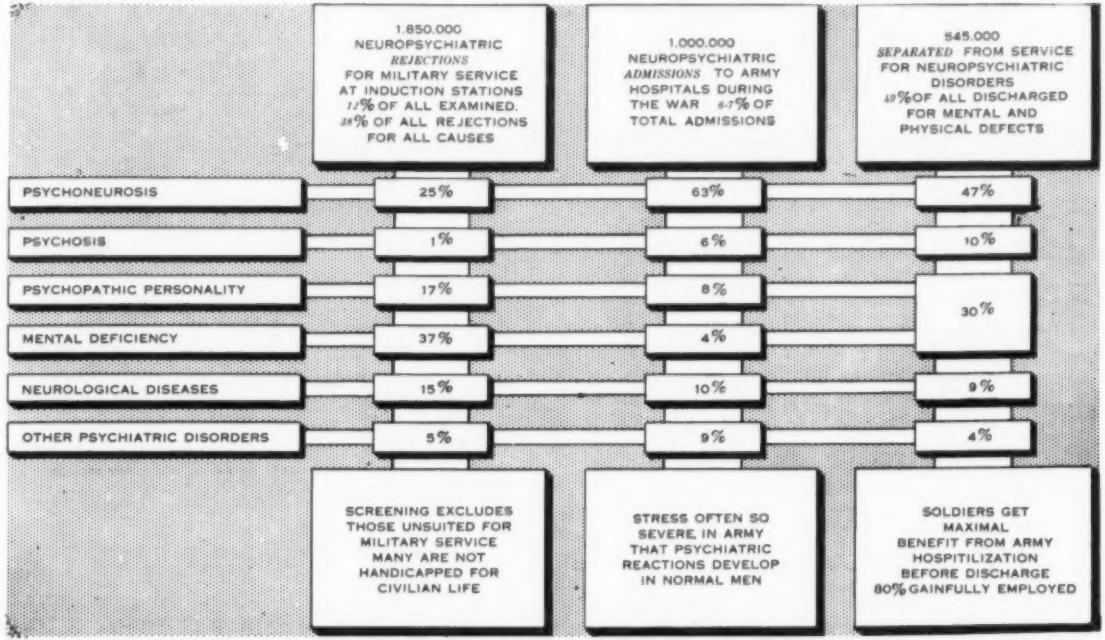


Figure 1. The magnitude of the neuropsychiatric problem during the years 1942-1945.

PHYSIOLOGICAL FACTORS

Basically, an individual consists of two main parts: a physical one which is called body and a mental one which is called mind. Since the physical part (body) can be readily seen, examined, weighed and fed, commanders, in most instances, take excellent care of this part of the individual soldier. The American soldier was the best fed fighter in the world and statistics proved that he gained both height and weight after entering the military service. But unfortunately, little or no provision was made to care for that other very important part of this individual—the mind.

Ordinarily, people assume that the brain constitutes all of an individual's mind. This conception is erroneous, however, as the brain is only an organ of the mind, and such things as nerves connected to the brain, are also a part of the mind. With such a complex mechanism within an individual, it is no wonder that it should be affected by a variety of causes. A death in the soldier's family, an illness of his loved ones, disappointments in his married life, financial worries—these and many other things can affect his mind and start him on the road to maladjustment.

And how about his own physical side? What is the relation between the mind and the body? The answer to this lies in the fact that *what affects the body will probably affect the mind, and vice versa.* For example, high fever causes a patient to become delirious; or, a soldier worried about problems at home refuses to eat properly, loses weight and sleep, and eventually has to be hospitalized. The body and the mind are so closely related that it is imperative that commanders consider both of them when they are studying their soldiers. The commander must care for the man's mind as well as his body. It is apparent that this was not accomplished very successfully in the last war. Certainly 1,000,000 admissions to Army hospitals and 545,000 discharges from the service for psychiatric disorders are evidence that somehow the correct solution was not found.

PERSONALITY

Going a little deeper into the problem of developing an individual into a fighting unit, personality and behavior must be discussed. Personality is a word which is usually improperly defined by most people. When asked for a definition, people are prone to say: "it is the way a person acts toward others," or, "it is the way he appears to other people," or even, "the way he makes a hit with those around him." The general idea appears to be that a man's personality is a limited thing; that it depends mainly on his personal contact with people, and that he has a good or bad personality, depending on the way he impresses those around him. This is an erroneous idea and one which falsifies the concept of personality. The term "personality" refers to the total man—his physical structure and his behavior. It includes the composite resulting response of his organs and emotions, his muscles and his mind, his bowlegs and his battle experiences. In other words, it can be summed up by the phrase "all that he has been, all that he is, and all that he hopes to be."

Thus, the past experiences of an individual are a part of his personality. Such things as the treatment which he received at home during his childhood, his experiences in high school, his battle experiences; all of them have influenced his personality. Besides these past experiences, his present daily problems and worries are also making an impression on him. Family troubles, financial worries, and inability to get what he desires, will influence him adversely while a happy home life, a good position, or confidence in his leaders will become factors of positive value. Equally so, what this man hopes to be in the future exerts some influence on his personality make-up today. The grocery clerk who aspires to be the next store manager molds his personality so that it agrees with his ambition; similarly, a soldier who joins the Army as a career is going to try to better himself in every possible way. Anything he does towards this end will affect his personality. Thus, the commander when trying to study and know his soldiers, must look not only to the present but to the soldier's past and future.

A clear conception of the development of the personality may be reduced into a simple diagram, containing three basic parts. The parts are: the instincts, the ego, and the conscience. The instincts are referred to by psychiatrists as the "id" and the conscience is also known as the "super ego." In the non-medical terminology of this article, however, the terms instincts and conscience will be used whenever indicated.

Every individual's personality has these three basic parts. A discussion of their characteristics and functions will later show how many changes in any of the three component parts results in a deviation from the so called "normal personality." In order to present a graphic illustration of the effects produced by these three portions of the personality on the individual, they have been placed on top of his head to indicate that they are subject to disturbances and that they are responsible for the individual's overt actions. Notice that the well balanced individual portrayed in figure 2 has instincts and a conscience which are well balanced by the ego. To understand the meaning of this illustration it is necessary to examine the functions of these three components.

The instincts, which are also known as "drives," supply the energy required for our behavior. They are inherent and influence the individual from the very first moment of life. Among the instincts are such things as love, hunger, anger, fear, and gregariousness. Except for the latter which is termed the herd instinct, the terms are self-explanatory. The herd instinct is that desire which is present in most of us to be identified with a group. This instinct will be discussed at length later in this article as it is very important as far as the Army is concerned. Notice that the set of inherent instincts come under two categories: those which strive for self-preservation, such as hunger; and those which strive for race preservation, such as love and the herd instinct. As stated before, everyone has the whole set of instincts but the degree varies individually. Some men have a stronger fear instinct than others; some men have a strong herd instinct, while in others, it is weak. It is

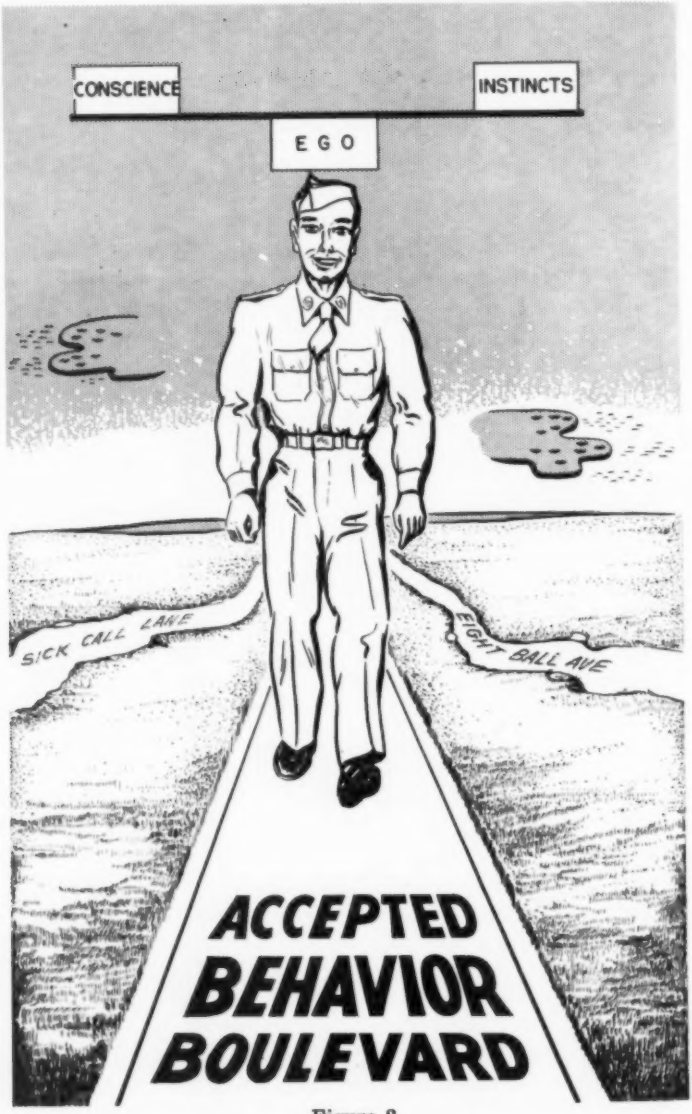

CONSCIENCE
INSTINCTS
EGO
SICK CALL LANE
EIGHT BALL AVE
ACCEPTED
BEHAVIOR
BOULEVARD

Figure 2.

significant to note that most of these drives or instincts are self-indulgent or pleasure seeking in nature. Thus, while indulgence to the urge may effect a great deal of personal satisfaction, it may also embroil the individual in trouble with society. These instincts are constantly bombarding the middle portion of the personality which is called "the ego," and urging it to follow these primitive drives into the realm of pleasure or self-indulgence.

CONSCIENCE

The civilized individual has in his personality a rather recently added portion—the conscience, also known as the super ego. The purpose of the conscience is to monitor the constant messages sent to the ego by the instincts. It is what has been called "the ethical layer" of the personality whose main purpose is to differentiate between right and wrong and to set up counterdrives to the drives which are said to originate in the instinct portion of the personality. There are many factors which enter into the development of the conscience. Among the most important of them are the home, the family, school, religion, laws, the standards of the community, and the national philosophy and ethics.

Beginning in the home, children are taught the difference between right and wrong. They are also taught to eat only three times a day and to control anger and fear when confronted by unpleasant situations. Sexual education also is started at home to avoid the mantle of sin or the taint of impurity that is frequently connected with the term. Later, during the school years, children are guided by teachers toward good citizenship and social harmony. Religion is also very beneficial in instructing the youth in the differences between right and wrong. The policeman, as a symbol of civil law, is a forceful factor in the control of an individual's instincts through the fear of consequent punishment. As the individual matures and becomes an entity in his community, he is further influenced by its standards and its code of morals and ethics. And so the picture develops, a picture of right and wrong, a picture of control rather than

a picture of urges and drives prompted by instincts. Although these pictures are direct opposites, the bombardment springing from the conscience into the ego is one of self-control, and self-denial.

EGO

This portion of personality can be defined as one of awareness or distinction of self from others; or restated, as that part of an individual which acknowledges reality. It is the portion of personality which maintains contact with environment. It is constantly being bombarded by the drives from the instincts and by inhibiting and modifying arguments from the conscience. Since the ego is receiving opposite arguments from the instincts and the conscience, it becomes a battleground where conflicts concerning behavior must be settled. As the ego is aware of environment, it listens to these arguments and then arrives at a decision. This decision is what is termed "behavior" or individual reaction to any given situation. In the majority of individuals, the correct decision is made because the three portions of personality are well developed and properly balanced. What is the type of behavior that is commonly shown by the majority of indviduals? It is the accepted behavior for the particular society of which he is a member. If reference is made once more to figure 2, an individual is seen who has arrived at the right solution and thus is walking down the "Accepted Behavior Boulevard." (This is not labeled "Normal Behavior Boulevard" since what is normal behavior in the United States may not be normal behavior for Zululand and vice versa.) It is well to remember that even normal individuals may not come out with the correct solution in some instances, but since this happens only occasionally, he is shown striding, rather securely, along the path which will permit him to become well adjusted in the strange environment of Army life. This means that he has a well developed personality in which the drives from the instincts are modified by the conscience, thus guiding the individual into the path that will make him an acceptable member of society. Individuals are constantly being called upon to make decisions and only those with a well balanced personality

are able to produce consistently the desired results. Fortunately for the unit commander, the majority of the individuals that he will command are well balanced individuals, capable of producing adequate solutions to whatever problems are presented to them by Army life and the stress of combat.

PERSONALITY VARIATIONS

In certain instances, commanders may have in their units, certain individuals, who although not abnormal, must certainly be classified at least as a variation from the normal. These individuals exhibit some defect in their personality make-up and thus are unable to produce a correct solution to certain situations. There are innumerable types of personalities which may cross the unit commander's path. An examination of figure 3 shows that this individual is different from the self-assured, non-vacillating soldier of figure 2. A careful study of the three blocks representing the conscience, the ego, and the instincts, shows that the instinct block is definitely smaller. This man, therefore, was born with a complete set of instincts, but each of them is dwarfed in quantity. Thus, the urges or drives which normally activate an individual are not very strong in this soldier. When this happens, the conflict which arises inside the ego in any given situation is decided against the instinct block and for the conscience block. He is no longer a man possessing normal drives and walking along "Accepted Behavior Boulevard." Instead, he is a weak, mild soldier on his way down "Sick Call Lane." This man may be classified as the weak-drive type of personality; the Casper Milquetoast type of the Sunday comics; the hypochondriac and neurasthenic who, unable to solve his problems courageously, prefers to feign sickness or actually become ill and thus dodge responsibility. This man cannot direct his own actions in his life struggle and so it is useless to place him in a position where he will be required to lead other men. Certainly he should not be designated a squad leader or a platoon sergeant. There are other jobs in the Army that he can perform well, however. Suggested jobs for this type are: clerk,

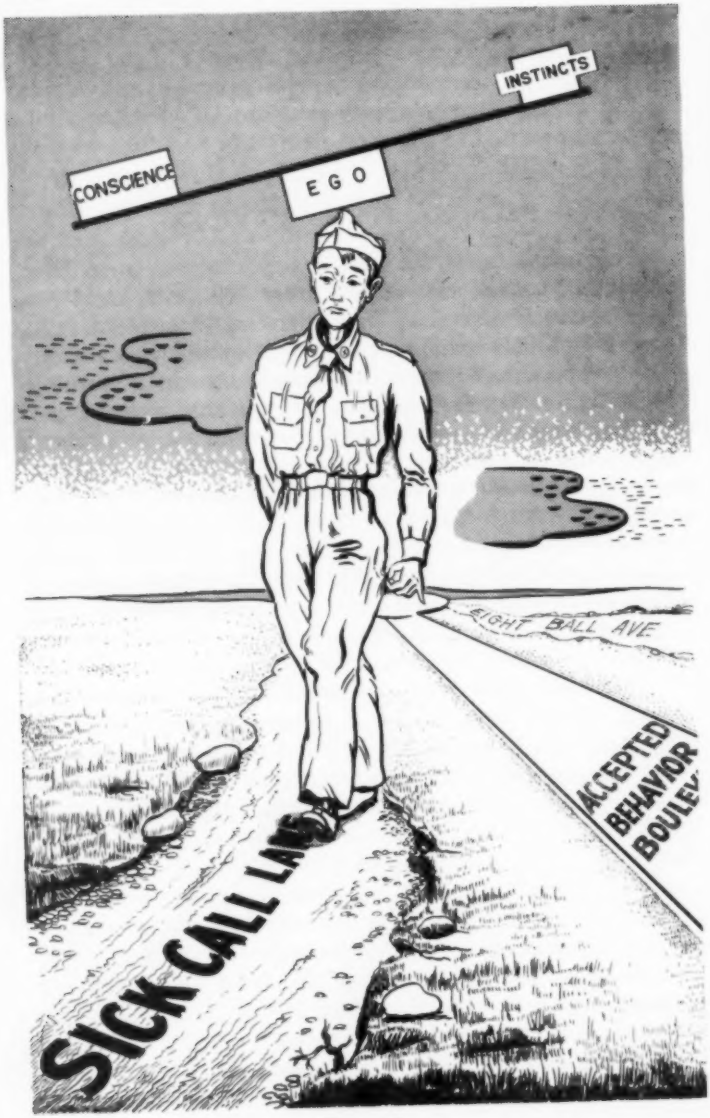

INSTINCTS
CONSCIENCE
EGO
EIGHT BALL AVE
ACCEPTED BEHAVIOR
SICK CALL

Figure 3.

radio or telephone operator, worker in a supply depot, and other jobs of a similar nature.

The question naturally follows, can this man's personality be developed by a unit commander into that of a more aggressive type? It is believed that by proper physical conditioning, training, and indoctrination, this can be done; but unfortunately, neither the time may be available nor the circumstances present for such an attempt during wartime.

Figure 4 presents a rather common type of personality. He has an adequate set of instincts, a well developed ego, but a rather small, undeveloped conscience. What is the net result as shown by his behavior? His actions will be determined by his instincts which are strong and not inhibited by his weak conscience; they will be self-indulgent and usually anti-social in nature. He is constantly getting into trouble. He may go absent without leave just to satisfy a whim of his fancy; he may practice petty thievery; and he is not averse to deserting his unit when the time comes for moving into the line. Thus he may be termed the continual delinquent type or, to use a more common term, the 8-ball. He does not follow "Accepted Behavior Boulevard" but, drawn by the weight of his instincts, he is swaggering down "8-ball Avenue." What can the commander do towards improving this man? Education, training, and discipline in adequate doses *may* straighten him out. Continual-delinquent cases should have the benefit of close cooperation between the commander, the unit surgeon, and the unit or station psychiatrist. By the concerted efforts of these three individuals, salvage of some of these men may be effected for the Army.

Another type of personality encountered is illustrated in figure 5. If reference is made to the three portions of his personality, it will be noted that he has a well developed set of instincts, a well developed conscience, but a rather undeveloped ego. This weak, undeveloped ego finds itself being called upon to solve the problems arising from the conflict between the instincts and the conscience. It is unable, in certain instances, to arrive at the approved solution;

CONSCIENCE
EGO
INSTINCTS
SICK CALL LANE
ACCEPTED BEHAVIOR BOULEVARD
EIGHTBALL AVE

Figure 4.

today, the voice of the instincts is stronger than the conscience, and his behavior involves him in trouble with society; perhaps tomorrow, the conscience is stronger and he behaves in the same manner as the weak-drive personality. There are times too, when the three forces are on an even level and he makes decisions in accord with the standards of society. He is shown standing undecided, at the junction of the three roads, because he may go in any direction depending on which portion of his personality is predominant at that particular moment. His personality is characterized by see-saw action, and he is called the unpredictable, "sensitive type." This man seems unable to control himself; he knows what he should do but his commanding officer cannot depend on him to do the right thing all of the time. He may be absent without leave just prior to being shipped overseas because his fear instinct urged him to run away; later, he may heed the dictates of his conscience, rejoin his unit, and become a model soldier for a period of time. When he again gets the urge from his instincts, he may engage in black market or other illicit operations. Obviously, this type of individual is truly a headache to the company commander.

In order to get the most out of this man as a soldier, the unit commander must attempt to develop his ego until it is large enough to balance the forces exerted by his conscience and his instincts. Sometimes, if the individual is otherwise qualified, a promotion may be used to inflate his ego; or, an order posted on the company bulletin board designating Corporal Blank as the NCO in charge of salvage activities in the command, may create the desired sense of importance and promote his adjustment to Army life. However, constant supervision must be exercised over this type of individual until it is reasonably certain that he has attained the desired balance in his personality. Incidentally, it might be well to secure the advice of the neuropsychiatrist to assist in handling this particular type.

There is one more personality type which may be encountered by a line commander and who, if properly handled, turns out to be a good soldier. Refer to figure 6 and examine this man's personality traits. Note that his instincts and

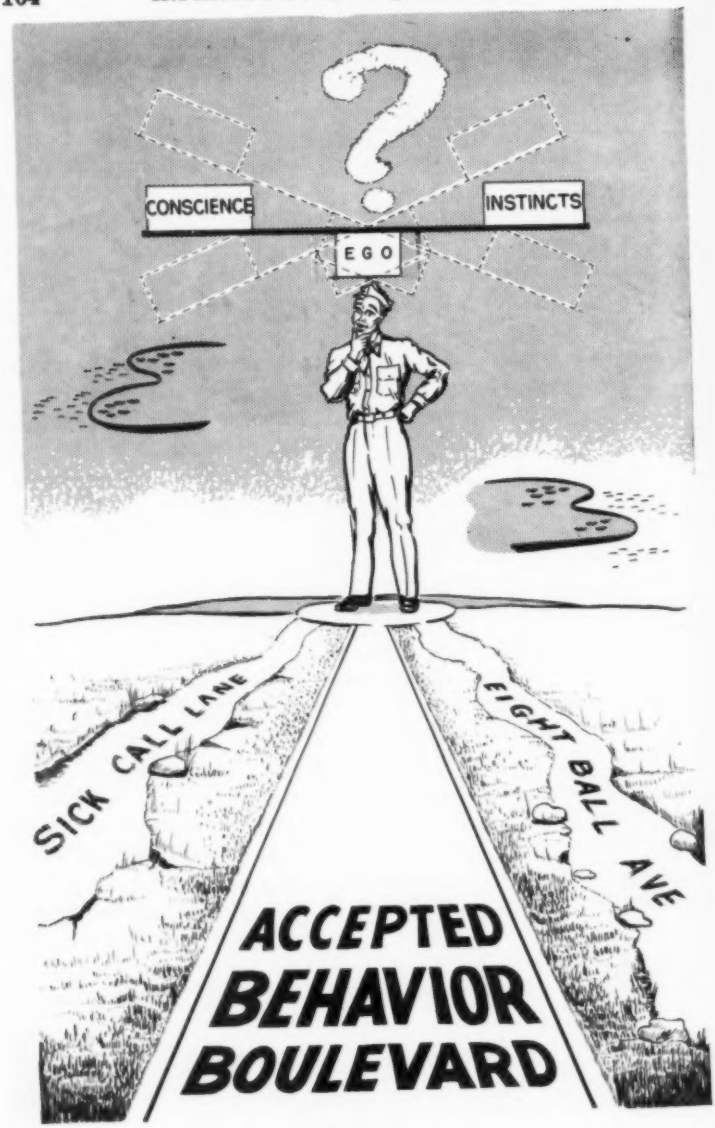

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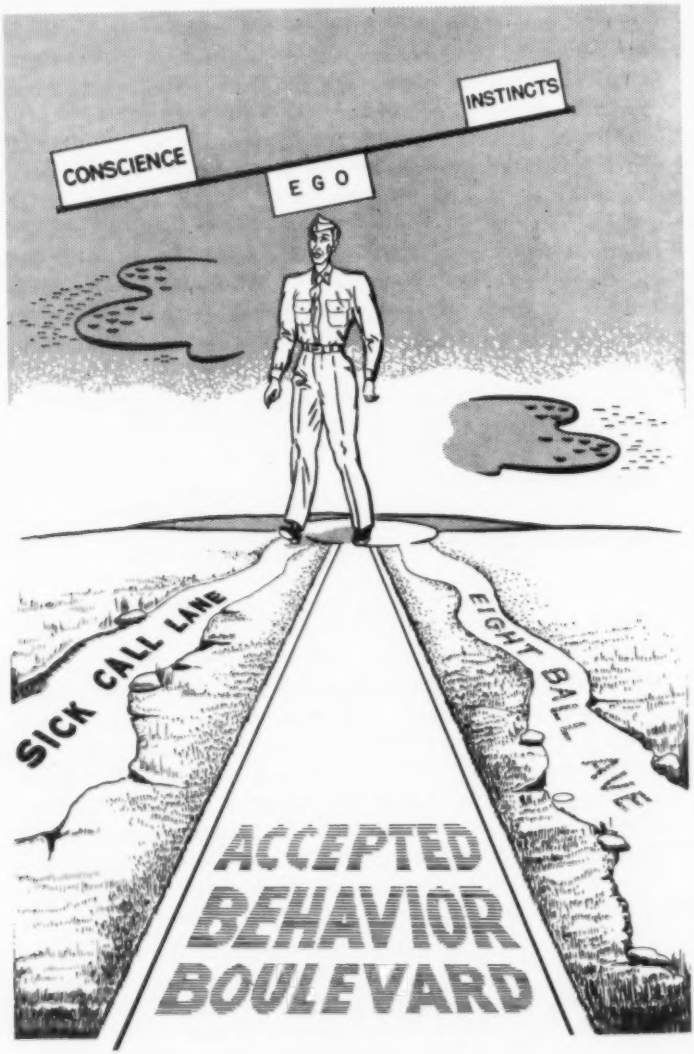
Figure 5.

ego are well developed but that his conscience is over developed. The family training, schooling, religious beliefs, and social customs which have influenced this man have caused this excess growth of conscience, and, although he may experience the normal drives arising from instincts, these drives are repressed or smothered by the very strong counterdrives emanating from his conscience. What is the usual picture presented by this individual? Normally, he follows a set pattern in everything he does. He has a very strict code of ethics, he likes to put out perfect work, and is very meticulous even in small things. As a result, he stands apart from other individuals and does not take part in the same extra-curricular activities as the other members of the unit. In his work, however, he produces a finished product, is very careful not to make any mistakes, and is constantly striving to achieve perfection. Although these appear to be excellent attributes, at times, the desire to achieve perfection may boomerang. This will happen if, because of pressure to get things done in a hurry, he is required to put out unfinished work such as incomplete service records to accompany personnel leaving the unit. Since it is against his personality make-up to do it, he will not do it and, since his conscience will not allow him to defy authority, he seeks an "out" by becoming sick. This man is called the psychosomatic type and is therefore shown strolling down "Sick-Call Lane" whenever he becomes maladjusted. Obviously, this meticulous individual can be used to advantage as a company clerk, or in a personnel or a finance office, but his idiosyncracies must be remembered. Do not require him to put out unfinished work; on the contrary, demand the best. However, if the work assigned to him cannot be finished within the time allotted, he must have assistance so that he will be able to produce the type of work which is in harmony with his personality make-up.

OTHER FACTORS

Besides the individual's personality make-up, other factors which have a definite influence on his ability to adjust to Army life are mental endowment, mood swings, extroversion, and introversion.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BEHAVIOR
BOULEVARD

Figure 6.

Mental endowment can be defined as the inherent ability to learn. The Army classifies its enlisted personnel as to mental endowment according to the score which is attained on the Adjutant General's Classification Test. Thus, there are classes I to V with scores ranging from 130 or above for Class I, and below 70 for Class V. Classes II, III, and IV have intermediate scores ranging from 129 to 70. The commander will find that the majority of his men will fall in the intermediate classes II, III, and IV. In this connection, the unit commander should realize that individuals in class I are not necessarily good soldiers; particularly, if they are emotionally unstable. An excellent mental endowment does not insure the ability to adjust to Army life, but it is an aid to adjustment.

The type of instruction given in the Army requires a certain degree of mental endowment. This fact has recently been brought out in the directive issued by the War Department refusing enlistment or reenlistment in the Regular Army to any individual whose AGCT score is below 70. Even if this directive is revoked in time of national emergency, the commander must remember that Class V individuals must be assigned to jobs compatible with their mental capacity.

Another factor which influences behavior is the mood swing of the individual. Emotions do not run a steady course in the well adjusted individual; rather, they are characterized by a series of "ups and downs." Good news, financial success, promotion, or a happy marriage will cause spirits to rise, while bad news of any sort will cause them to take a dive into depression. The well adjusted individual recognizes that he will have his "ups and downs" and, by being aware of these changes, is able to stay on an even keel and to solve his problems even when depressed. Maybe the resulting solution may not be the perfect one, but it is probably the best solution under the existing circumstances. But those individuals afflicted with maladjusted personalities are affected to a greater extent by these moods than the normal individual. The commander should consider

this factor in order to prevent such individuals from breaking down under the stress of depression.

Another factor which influences the individual's capacity to adjust is extroversion. An extrovert is an individual who ordinarily is cheerful, sociable, and active. He makes friends easily and is capable of a high degree of energy output. In other words, this man is a "doer" and not a "thinker." He is the executive type, a good salesman, and he thrives on success. In this individual, the drives from the instincts are not impeded by the conscience; rather, they are immediately converted into action. So he is the tactician type—the man who lives for the outside world—one who cannot be suppressed into inactivity and thus looks with disfavor upon any job which would force him into such a state.

The opposite of the extrovert is the introvert. This type is the "thinker" rather than the "doer." He derives pleasure from within himself and not from the outside world as does the extrovert. Action is not important to this type, but he is a successful planner because he can do some real thinking about any problem he tackles. Militarily, it can be said that this man will be a good strategist. Socially, he does not seek the company of others, and usually he is quiet and unassuming. He is a visionary, and many of the greatest discoveries have been made by men of this type.

Most people are not true extroverts or true introverts but a mixture of both types. An ideal type would be a 60-40 combination of extroversion and introversion. Although the degree of one or the other cannot actually be measured, the commander can detect whether extroversion or introversion predominates in a particular soldier.

How does extroversion and introversion affect the commander's method of handling personnel adjustment in his unit? Obviously, there are certain types of jobs in the Army suited for a man with a predominance of extroversion which would cause maladjustment in an introvert. Such jobs as platoon sergeant, A&R Officer, first sergeant, and squad leader are suitable for the extrovert whereas craftsman, operator of highly technical machines such as radar, mechanics, and assistant to the chaplain are all jobs

suitable for an introvert type of personality. A good commander must consider the individual's personality make-up in addition to all other factors when he is making assignments within his unit. Incidentally, it should be mentioned here that the extrovert type is more readily disturbed by failure to gain a promotion than the introvert type who, since he lives for himself and not the outside world, is able to take this disappointment in stride.

SUMMARY

In this article attempt has been made to bring out certain salient factors regarding maladjustment that are of importance to the unit commander. These are:

1. Mental maladjustments were the greatest single cause of manpower losses in World War II.
2. The commander must care for both the physical part (body) and the mental part (mind) of his soldiers.
3. Most individuals are usually well adjusted and are able to withstand the stress of Army life and combat. However, they require the attention of the unit commander as they, too, can become maladjusted under certain circumstances.
4. The commander will find in his unit, individuals who, although not psychotic, are deviations from the normal. These require extra attention since they become maladjusted more easily than the normal personality.
5. Other factors which influence an individual's ability to adapt to Army life are mental endowment, mood swings, extroversion, and introversion.
6. Commanders must consider the individual's personality and other assorted factors, in order to attain good mental hygiene in his command.

(Note: *To be concluded. The second article concerning the role of leadership in preventing maladjustment will be published at an early date.*)

Subcaliber Training for the Gun Platoon

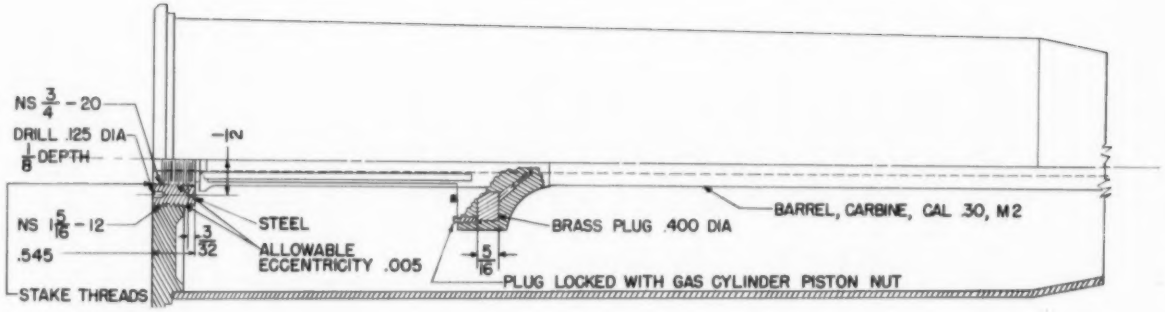
With the inevitable limitation on the use of service ammunition, and the rather limited range facilities available at many stations, the subcaliber device is certain to become the most important single aid for training gunners for the 75-mm rifle. It provides a simple, inexpensive, and graphic means of demonstrating the effect of proper laying of the piece and proper firing procedure.

Inasmuch as a standard subcaliber device has not been approved for manufacture, The Infantry School has developed a simple device in order to carry on satisfactory subcaliber training, until such time as a standard ordnance item becomes available for issue.

The device (figure 1) is essentially a 75-mm drill cartridge or an inert round with fuze, primer, and igniter removed. The projectile is drilled through the center to receive a carbine barrel and barrel extension (the latter is a pipe threaded at both ends). A barrel bushing is mounted in the base of the cartridge case. The headspace adjustment nose fits over the forward portion of the barrel extension and is held by a barrel locking nut.

The firing pin is a regular 75-mm firing pin turned down approximately 3/16 to 1/16 inches. The firing pin bushing fits in the firing pin aperture over the firing pin. (See Detail A, figure 1.)

Because the barrel cannot be made perfectly concentric, it is not desirable to remove the device from the chamber during firing. For this reason, the extractor should be removed from the weapon prior to installation of the device. During firing, caution must be observed in opening and closing the breech since the extractor also serves to hold the breechblock in the open position. In closing the breech, the locking threads may be easily burred. When the weapon


NS 3/4 - 20
DRILL .125 DIA
1/8 DEPTH
NS 1 5/16 - 12
.545
STAKE THREADS
STEEL
.3/32
ALLOWABLE
ECCENTRICITY .005
BRASS PLUG .400 DIA
5/16
PLUG LOCKED WITH GAS CYLINDER PISTON NUT
BARREL, CARBINE, CAL .30, M2

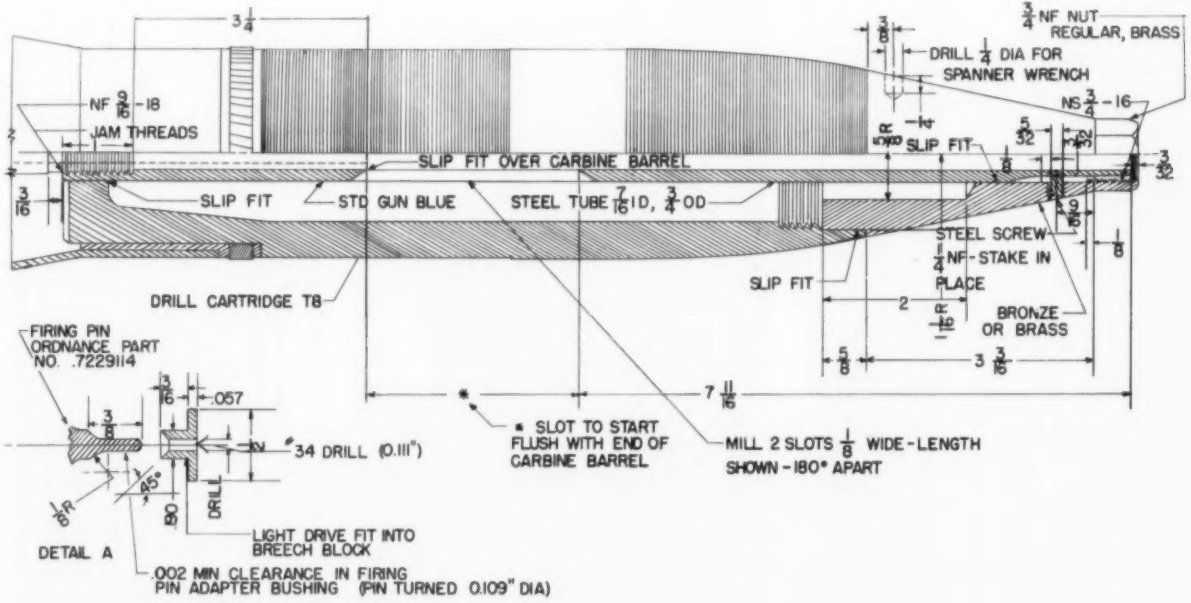


Figure 1. Detailed diagram of the 75-mm rifle subcaliber device.

has been prepared for firing, the device is loaded in the same manner as a service round.

NOTE: Before making one of these devices, it should be remembered that authority must be obtained for modification of carbine barrels.

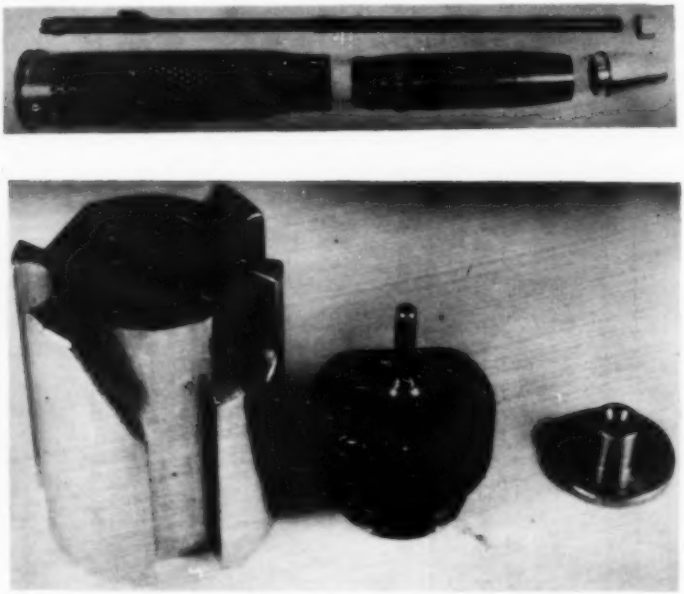


Figure 2. Component parts of the 75-mm rifle subcaliber device.

Loading is accomplished manually by placing a carbine cartridge in the breech of the subcaliber device. The piece is fired in the same manner as with service ammunition, and the device is unloaded by prying the carbine cartridge out of the device with a small screw driver.

Headspace adjustment is easily accomplished by loosening the barrel locking nut and rotating the headspace adjustment nose until the projection in the breech is flush with the base of the 75-mm cartridge case. The barrel locking nut is then tightened to maintain proper headspace.

USE OF THE DEVICE IN TRAINING

The subcaliber device will be found to be of use in all phases of instruction, from preliminary marksmanship through field firing. It is of particular value for—

a. Instilling confidence in the gunner.

b. Showing effects of small errors or improper manipulation.

c. Training section leaders.

d. Testing personnel.

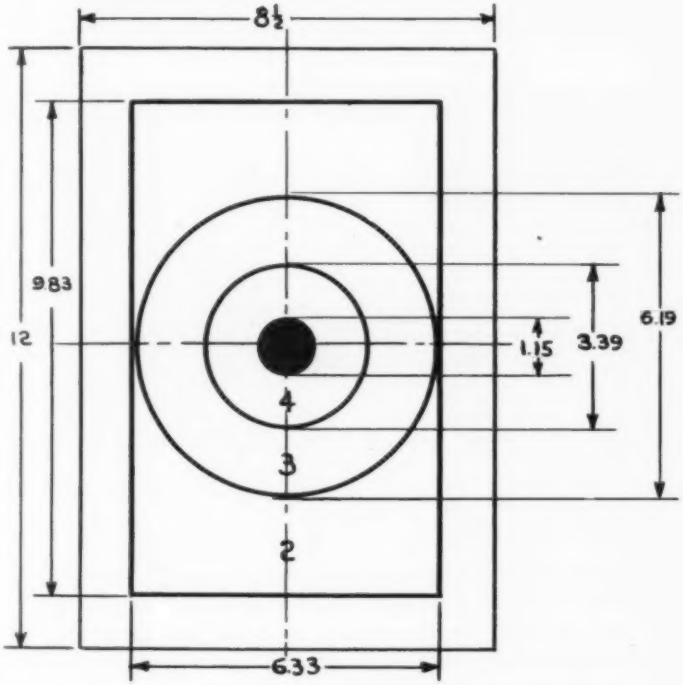


Figure 3. Specifications of the 1000-inch A rifle target.

PRELIMINARY MARKSMANSHIP

In preliminary marksmanship training, the subcaliber device is employed in teaching sighting and aiming, tracking and manipulation, and trigger squeeze.

For the initial stages in sighting and aiming for stationary targets, the 1000-inch rifle target "A" (figure 3) is satisfactory. After the gunner has become proficient at firing at a specific range it may be found desirable to face one target toward the gunner and place reversed targets behind this one and at different heights so that scoring can be accomplished for any given range.

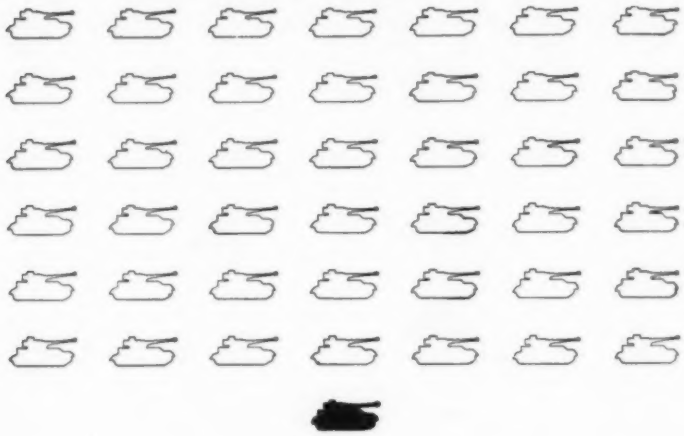


Figure 4. Improvised target for conducting instruction in sighting and aiming.

To target the subcaliber device at short ranges, a group of four or five rounds should be fired using the same sight picture. Without disturbing the lay of the gun, the sight is moved so that it is on the center of impact of the group with the desired assumed range. Another group of rounds is then fired to verify the zero. Once the targeting has been completed, the device should not be removed from the weapon until completion of firing if it can be avoided. If it becomes necessary to remove the device for headspace adjustment or any other reason, an attempt should be made to reseat it in the same lands and grooves that were used in targeting. The gun must be refired to check the zero after each installation.

When the proper sight picture for a stationary target has been thoroughly assimilated by the gunner, the next step is to instruct him in sight pictures for moving target firing. A very satisfactory target can be made to emphasize the sight picture for this type of firing (figure 4). The distance between horizontal rows of scoring spaces is equal to a change of 100 yards in range; the distance between vertical rows of scoring spaces is equal to one lead. The horizontal and vertical displacement between silhouettes can best be determined by shooting against a piece

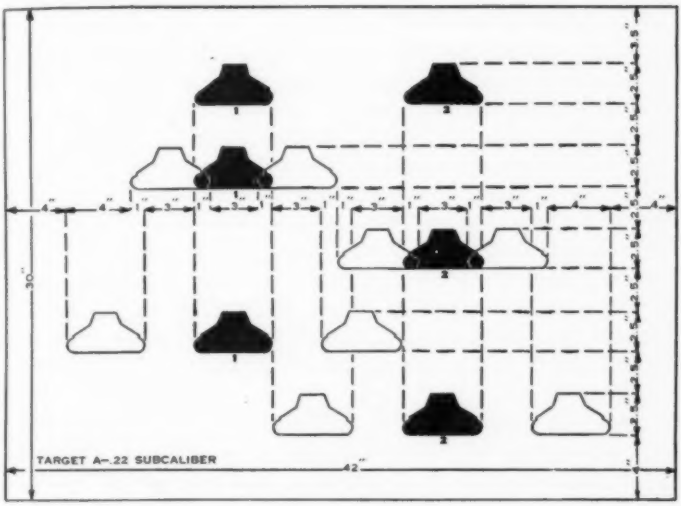


Figure 5. Caliber .22-.30 A 1000-inch subcaliber target.

of paper. The paper should be the size of a standard target, and should be placed at a range of 1,000 inches. After the initial tests, targets can be prepared quickly by using a cardboard template to outline the scoring spaces. The scoring spaces should be drawn in lightly with a lead pencil so that they will not be visible to the gunner.

In using this target, the weapon is first targeted so that the rounds will strike the dark silhouette with an elevation of zero. A series of fire commands for moving targets is then given and rounds fired with appropriate sight settings. Hits in the proper scoring spaces indicate that the correct sight picture is being employed by the gunner.

After the gunner has mastered the fundamental sight picture for firing on a moving target, the next step is to combine this with manipulation in tracking exercises. For this purpose, the Cal. .22-.30 "A" 1000-inch moving target (figure 5) is used. For this firing, the target should be moved across the front of the firing line at speeds of 12, 16, and 24 feet per second with the gunner taking 0, 1, and 2 leads respectively.

Upon completion of 1000-inch training, the gunner graduates to longer range firing. For stationary target firing at known distances, ranges of 200, 300, and 400 yards should be used. Tracer ammunition is necessary during this phase to enable the gunner to observe the round and make corrections. Targets used for this firing are the Prone "F" M-1917, at 200 and 300 yards and the kneeling "E" M-1917, at 400 yards. For moving target firing under these conditions, a range of 450 yards has been found satisfactory. The target for this firing should be a tank moving at 10 to 15 miles per hour, or if a tank is not available, a moving-type panel target such as that shown in figure 6.

Short group exercises have been found to be very helpful in teaching the importance of accurate use of the sight and proper trigger manipulation. For this firing, the target can be any piece of paper or cardboard with a paster to be used as an aiming point. The gunner is allowed to fire successive groups. Analysis and measurement of each group will result in reduction of the size of subsequent groups and emphasize the need for accurate laying by the gunner and proper trigger manipulation. After the gunner has become proficient in this type of exercise, the gun should be moved off the target in both range and deflection at least 15 mils between rounds.

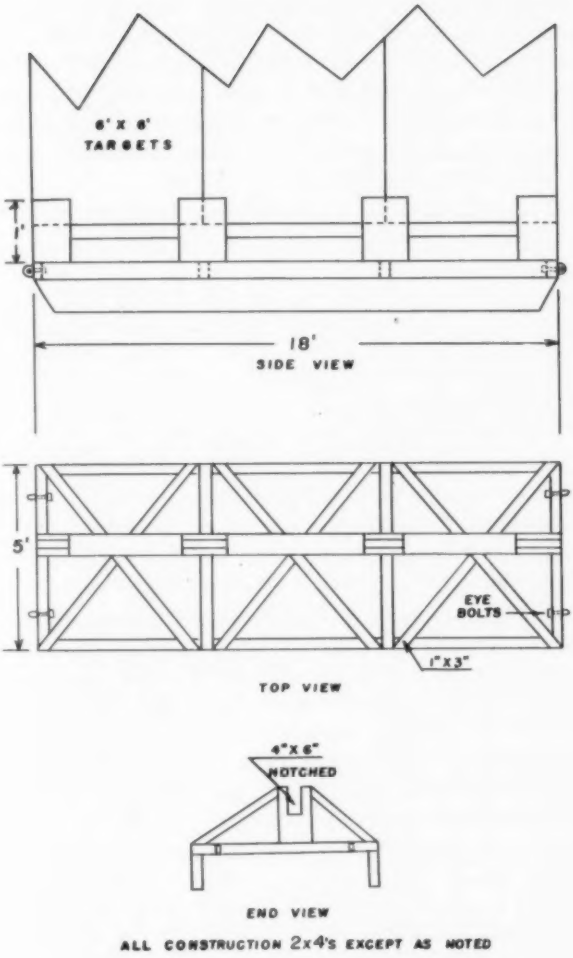


Figure 6. Construction details of a towed target.

TECHNIQUE OF DIRECT FIRE

Upon completion of marksmanship training, the gunner's newly acquired skills should be directed to a more realistic field—direct fire. At the same time the section must be trained to work together as a unit under the direction of the section leader. To accomplish these objectives, landscape target firing, transition firing, and finally, subcaliber field firing exercises are of value.

The advantages of landscape target firing are:

a. It permits close supervision of all members of the firing unit.

b. It clearly and quickly demonstrates the application and effect of fire.

c. It can be conducted indoors when lack of facilities or weather conditions make this desirable.

d. It emphasizes target designation and fire control.

A landscape target (figure 7) is a panoramic picture of a landscape. It is so drawn that all, or nearly all, of the salient features are recognizable at a distance of 1000 inches. The standard target is the Series "A" landscape target consisting of five sheets in black and white.

To permit proper designation of targets, assumed ranges must be on landscape targets. Small cards with appropriate numbers representing yards of range are tacked along one or both edges of a series of panels. The gunner zeros his rifle at a given range, and is cautioned that the range announced in any target designation is for the sole purpose of designating the target; the sight setting necessary to zero rifles must not be changed.

In order to provide the direction element in oral target designation, small cards marked "front", "right front", "left front", "right flank", "left flank", are tacked above the appropriate panels of the landscape series.

Scoring the exercise tends to create competition between individuals or sections and enables the instructor to grade their relative proficiency. For a point target, a scoring device conforming in size to the 50% and 75% shot groups

Figure 7. Series A landscape target.

can be made from wire, celluloid, plywood, or similar material (figure 8). The scoring space is outlined on the target in pencil before the target is shown to the section leaders to prevent them from misunderstanding the limits of the

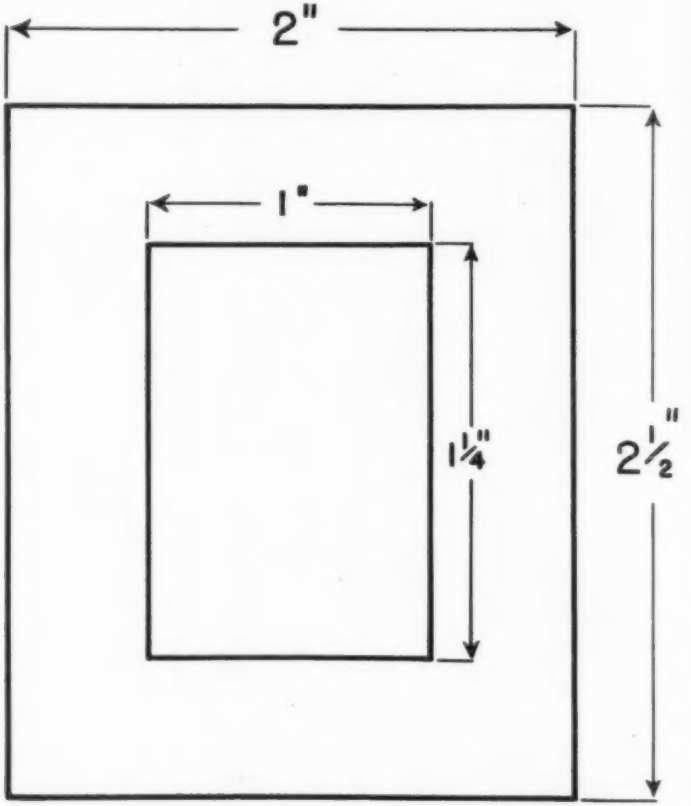


Figure 8. Scoring template for landscape target firing.

designated target. Upon completion of firing, the entire section is shown the target and the results of the firing.

Rifles are zeroed in the same manner as for 1000-inch firing except that an assumed range of 700 yards is used.

In firing exercises of this type, all members of the section except the section leader or acting section leader face to the rear. The instructor takes the section leader to the panels and points out the target to him. They return to the firing line, and the section leader takes charge of the section and causes the gunners and assistant gunners to resume their firing positions. The section leader issues his fire command orally, and each gunner fires five or ten rounds. Upon completion of firing, the target is examined and scored, following which, a critique is held.

For scoring, the sum of the value of the hits within the two zones is the score for the exercise. For convenience, either 50 or 100 points is fixed as the maximum score. Any method of scoring and of distribution of ammunition among members of the section may be used. For example:

a. Number of rounds fired, 50.

b. Value of each hit in 50 percent zone, 2.

c. Value of each hit in the area of the 75 percent zone, 1.

Exercises may be varied to emphasize any element of fire control.

TRANSITION FIRING

To provide practice for the gunner in searching areas, estimating ranges, and firing rapidly and accurately, transition exercises are employed. They form the bridge between marksmanship training and field firing.

Ranges are constructed to provide targets as outlined in the firing table below. For protection of the pit detail, individual open pits of the fighting-hole type should be used. To control the raising and lowering of targets, communication between the firing points and the pits is necessary. Targets are fastened to poles of sufficient length to permit exposure of the target from the pit without endangering the personnel in the pits. The number of lanes constructed will depend upon the number of persons to fire.

In conducting these exercises, the officer in charge of the firing directs the gunners to load and then gives the signal for raising targets. Unless hit, all targets remain up until the command to withdraw them is given. When all targets

are withdrawn, the target operator scores the targets and reports the score to the firing line. Since a hit is indicated by the lowering of the target, no extra credit is given for more than one hit on a target.

FIELD FIRING

Field firing exercises are normally fired with service type or practice ammunition, however, where facilities are limited, subcaliber field firing exercises are a reasonably satisfactory substitute.

The purpose of field firing is to demonstrate individual and crew proficiency in all phases of combat for the section and platoon. The unit is conducted through a series of exercises which, as nearly as possible, simulate battlefield conditions. The situation for each exercise will be given by the officer conducting the firing who will act as umpire. The tactical commanders will direct and control their units in the actions required. At the completion of each exercise, a critique will be held by the umpire.

The terrain should be varied for each exercise, if possible, so that the unit will be presented with a new situation. The following is provided as a guide for the preparation of such training exercises:

Purpose. The exercise should provide practice for the section leaders in control of their units in order to properly engage various types of targets. Members of the squad should receive training in application of the factors which govern the selection of positions, the use of individual cover and concealment, ammunition supply, and technique of fire.

Firing should be conducted in accordance with the following table:

No of Rounds	Type target	Range	Maximum Score
3	Prone "F" M1917	Unknown (O-200 yards)	5
3	Prone "F" M1917	Unknown (O-300 yards)	5
3	Kneeling "E" M1917	Unknown (300-500 yards)	5
3	Kneeling "E" M1917	Unknown (300-500 yards)	5
	Score for rounds not fired		8
	Possible score		28

Remarks: 1. Carbine tracer ammunition will be used.
2. Time allowance, 3 minutes for entire table.
3. Gunner will be allowed 3 rounds to hit each target. If he does not get a hit in 3 rounds, he proceeds to the next target. He will be given a credit of one point for each round not fired per target, providing the target is hit. No credit will be given for rounds not expended per target if the target is not hit. However, it is not necessary that all targets be hit to receive credit for unexpended rounds on targets that were hit with less than 3 rounds.
4. Target scoring will be done by operators in pits.
5. Fifteen points is a satisfactory score for this exercise.

Situation. The section is located in an assembly area and is issued ammunition. The section leader is given pertinent portions of an operations order to include position areas, target areas and sectors of fire, and the location of friendly troops.

Conduct of exercises. The section leader selects his route of approach and a gun position, and issues the necessary orders to place the gun in position. When a target is indicated, the section leader issues his fire command, opens fire, and adjusts fire. Fire for effect is not a part of these exercises. As soon as the fire has been adjusted, the duties of the crew are rotated and a new target designated. The section leader must be prepared at any time to displace forward, move to an alternate position, or withdraw to a covered area on command. Selection of the proper

type of ammunition should be included in the fire command of the section leader as though he were firing service ammunition.

Targets. Some possible types of targets are:

1. Camouflaged cave-type fortification with natural camouflage. Cave opening to be two feet by one foot. Range 200-300 yards.
2. Mock tank or tank chassis. Range 300-400 yards.
3. Camouflaged log and earth pill box. Range 400-500 yards.
4. Pill box requiring section leader to smoke the apertures. Range 200-300 yards.

Critique. At the completion of each exercise, the officer conducting the exercise should conduct a critique covering the essential elements which the exercise was designed to bring out. These may include; reconnaissance, actions and orders of unit leaders, suitability of observation posts, suitability of firing positions, suitability of alternate positions, use of cover and concealment, technique of fire, ammunition resupply plans, and employment of proper types of ammunition. (Care should be taken by the officer conducting the critique to avoid confusing effectiveness of fire with over all unit performance.)

INDIRECT FIRE

Indirect fire theory and manipulation of the indirect fire sight may be effectively taught by landscape target firing exercises, and subcaliber field firing exercises.

Indirect laying on landscape targets at unknown short ranges provides a convenient method of training observers, section leaders, and gun crews in the principles of battery fire, and may be conducted on indoor ranges or on miniature outdoor ranges where facilities are not adequate for field firing. It permits close supervision of all members of the firing unit, develops teamwork, and arouses a competitive spirit among the participants. It clearly and quickly demonstrates the application and effect of fire and prepares the gunners for field firing.

Targets are the same as those used for direct fire exercises, however, they should be mounted with the bottom of the panel at least three feet above the ground.

The battery is located at an unknown range from the targets. Guns are mounted as close to the ground as the tripod permits. Gun intervals are reduced to the minimum. The rifles are boresighted as for indirect fire. A round is then fired at a zeroing paster on the target. The tube remains stationary and the sight is then referred until the vertical cross hair of the reticle is alined on the hole made by this round. Upon completion of this operation, select a vertical line on the target and rotate the tube until the vertical cross hair of the reticle is alined on this vertical line. All guns are alined on this same vertical line and then opened the desired number of mils. This becomes the base deflection and all sights are referred to a selected aiming point to the flank or rear of the gun position.

A screen (representing the mask) is set up in front of the battery to prevent the gunners from observing the target while laying. Bullets pass through, rather than over, the mask.

In conducting these exercises, an OP is established at a position on one flank; the observer is given the location of the base point and the elevations thereto. He is then given a target on which to adjust and fire for effect. Upon completion of his mission, he and the gun crews are critiqued by the officer conducting the firing, and the target is scored. Care should be taken to require the observer to employ normal procedure and not attempt to take shortcuts which might detract from the value of the exercise. At the completion of each exercise, duties should be rotated to provide training for all personnel.

FIELD FIRING, INDIRECT FIRE

For field firing exercises in indirect fire, the same methods and procedures are used as those outlined for direct fire. However, the situation must be so drawn that indirect fire is clearly indicated.

Combat Operations of a Mountain Infantry Battalion

(An Historical Monograph)

Stagnation of the Gothic Line in Northern Italy in December 1944, dictated that the Christmas offensive which was scheduled to crash through to Bologna and the Po Valley, be cancelled. Not only had bad weather paralyzed supply functions with deep mud beneath layers of snow, but the transfer of several British divisions to France created a lack of force which made further penetration infeasible, if not impossible.

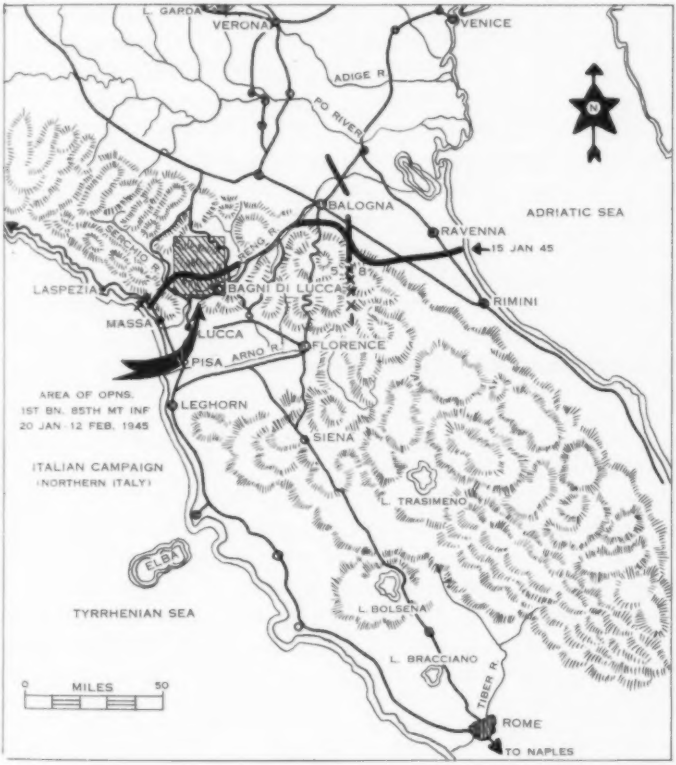
In mid-January, the 10th Mountain Division was committed to inital combat operations on the north Italian front under operational control of Task Force 45, part of the U S IV Corps, which, with the II Corps, comprised the U S Fifth Army.

The IV Corps front extended over a distance of 75 miles from the Ligurian coast, south of Massa, to the town of Poretta located on the boundary between the two U S Army Corps.

Task Force 45, to which the 10th Mountain Division was assigned, occupied the center of the IV Corps front, east from Bagni di Lucca to Poretta Terme, and embraced part of the most rugged mountain terrain in northern Italy.

At the time the events in this monograph took place, all offensive action in the Fifth Army area had been postponed because of the diversionary German attack in the Serchio River Valley in late December, and also, because of the shortage of combat troops in Italy. The only missions assigned combat elements of the IV Corps were punitive sorties, security, intelligence and reconnaissance patrols.

On 17 January, 1945, the commanding officer of the 85th Mountain Infantry received a warning order to be prepared to take over a portion of the Task Force 45 front being held by the 86th Mountain Infantry, which had already been in the line for two weeks.



Map 1.

Battalion commanders were alerted and orders issued for a staff reconnaissance of the sector to be occupied.

A hasty foot reconnaissance in the vicinity of Bagni di Lucca convinced the first battalion commander that the terrain would be just as much a problem as the enemy was expected to be.

The company commander of Company I, 86th Mountain Infantry, explained the enemy and friendly situation in his sector as follows:

"We have been in this area two weeks and have made contact with the Germans just once. That was on 15 January near Rimessa, a small hamlet about eight miles north of here. We were ambushed while on a reconnaissance patrol and our partisan guide was killed. Civilians living in Montefegatesi, another village about five miles above here, reported to the OSS that a German patrol was in that vicinity and had stolen several goats and sheep two days ago.

"My company is spread very thinly over this huge sector. I have one platoon operating a half-track patrol between Bagni di Lucca and La Lima. This patrol has three half tracks, each armed with quadruple-mount .50-caliber machine guns. We run this patrol at various hours of the day and night, and occasionally fire a few rounds to impress the civilians.

"My other two rifle platoons I have split into sections and outposted in several small villages just above Bagni di Lucca. I will be able to furnish you with guides to lead your units into position whenever you are definitely ordered to relieve me."

The first battalion S-3 made arrangements to take over the villa which was being used as a command post and also to take over the existing communication lines between Bagni di Lucca and Campo Tizzoro (40 miles to the east).

The battalion commander and his S-3 then took a map of the area, climbed high on a ridge above Bagni di Lucca and made a brief terrain analysis of the area north of the town.

The battalion commander and his party returned to the staging area at Pisa late that night. Plans were made to return to Bagni di Lucca on 18 January with all first battalion company commanders to make a complete reconnaissance of the sector.

The plan was put into operation on 19 January, and on completion of the reconnaissance, the battalion commander issued his orders for the eventual relief of Company I, 86th Mountain Infantry.

Arriving back at the staging area about 2200 hours, 19 January, the battalion commander was informed that orders had been received to move the battalion into the Bagni di Lucca sector the next day, 20 January.

TERRAIN ANALYSIS

The sector into which the 1st Battalion, 85th Mountain Infantry, had been ordered to move can be adequately described in just one word: *Rugged.*

Bagni di Lucca, a small summer resort famed for its natural hot springs, is situated at the confluence of the Serchio and Lima Rivers. It lies at an elevation of about 700 feet above sea level.

This little town, in which the command post of the first battalion was located during the entire operation, could be described as the apex of an inverted triangle within which lay the battalion's zone of operations.

The Lima River, a large mountain torrent, formed the eastern boundary of the sector. The 25th Easting, which also formed the boundary between the 92nd Division and Task Force 45, marked the western confine.

The base of the inverted triangle, nine miles due north, was formed by the backbone ridge of the Apennine range and was marked more distinctly by three perpetually snow-capped peaks — Alpe tre Potenza (6,050 feet), Femmina Morte (5,600 feet), and Monte Rondinaio (5,950 feet). These jagged mountains, and their connecting ridges were arranged in a great semi-circle around a huge bowl formed by the drainage of the Fegana River, a stream which empties into the Serchio River two miles west of Bagni di Lucca.

Three ridges, all of which converged towards the apex of the terrain triangle being described, radiated south from the high mountains and tended to complete the bowl formation already described. The ridges also formed the principal

routes of approach into the first battalion sector; and, conversely, into the mountains from Bagni di Lucca.

The longest and highest of these three ridges hooked onto Alpe tre Potenza on the east and then curved sharply southwest and rose to form Monte Mosca (4,500 feet). From Monte Mosca this ridge branched, the main part running southwest until it ended at the confluence of the Serchio and Lima Rivers. It was this ridge which offered the greatest threat to the battalion's position.

The Fegana River, a raging mountain stream, had cut a deep gorge through the lower foothillls in making its way down from the bowl in which it got its start. Along this gorge, through the town of Tereglio, ran a precarious road which the Germans had blown-out in several places during their retreat the autumn before. This road was to play an important part in the operations of the battalion.

To the northeast, along Highway 12, the mountains rose so steeply, were so rugged, and were so deeply covered with snow, that no special defensive measures were deemed necessary other than the half-track patrol which operated along this highway as far as La Lima.

From this terrain analysis it was concluded that operations in the sector by either friendly or hostile forces would be limited because of the extremely rough terrain and the deep snow cover.

The 1st Battalion, 85th Mountain Infantry, began its move from Pisa (staging area) to Bagni di Lucca early on the morning of 20 January, and all units had cleared into the latter town by 1500 hours that afternoon. Guides were waiting when the truck convoy arrived and within an hour all the units, with the exception of Company C, were billeted.

Company C had been ordered to outpost the Monte Mosca ridge at positions two miles north and above Bagni di Lucca and had to back-pack all of its equipment up the steep paths leading to the ridge. A quarter-ton truck convoy was organized to move the company and baggage as far as Franzola, where the road ended.

The battalion was disposed as follows:

Company A was billeted at Bagni Caldi and was in battalion reserve.

Company B sent one platoon to Casa Unit and took over the operation of the half-track patrol between Bagni di Lucca and La Lima. Another platoon of Company B occupied previously prepared positions in the vicinity of San Gemignano, Langoio and San Rocco. The remainder of the company was billeted near the battalion CP.

Company C, with a rear CP in operation near the battalion supply point, had detachments in the following villages north of Bagni di Lucca: at Monte di Villa Lugnano, on top of the ridge, one platoon; at Monte di Villa Bugnano, Pieve di Monte di Villa, Riolo, and Granaiola, two squads each.

Company D sent the 1st platoon and one section of the 3d platoon to Monte di Villa Lugnano in support of Company C while the rest of the unit, for the time being, was billeted at La Villa.

The battalion headquarters and headquarters company was located in a fine old villa in La Villa. The place was so large that the entire company was accomodated with room to spare. The battalion CP opened at 1600 hours, 20 January. The medical detachment, motor pool, and supply establishment were set up near the CP.

The battalion was able to report to the regimental CP shortly before 2400 hours, 20 January, that the relief of Company I, 86th Mountain Infantry, had been completed. The regimental CP, incidentally, was located at Limestre, 26 miles to the northeast.

Little time was lost on 21 January, in strengthening the battalion's tactical position. On this day the reconnaissance patrol was sent out by Company C to check the mountain village of Montefegatesi (Map 3), where a German patrol and foraging party had been reported the week previously.

On 22 January, the patrol which had visited Montefegatesi on 21 January, reported that the town was an ideal place for an advance battalion outpost. Acting on this information, the battalion commander ordered Company A

to move one platoon to Montefegatesi and dig defensive positions on the high ground to the north.

On 23 January, the 1st Platoon, Company A, climbed the five-mile trail to Montefegatesi. The march was particularly arduous because the men were not yet in good physical condition. The fact that they were "soft" was caused by the long period of inaction at the port of embarkation and during the voyage to Italy.

An "Alpini" mule transport company, composed of former Italian Alpini troops who had volunteered to serve the Allies in a noncombatant status, was assigned to the battalion.

On the 24th of January a reconnaissance patrol operating out of Montefegatesi to the summit of Monte Mosca observed 13 men in the vicinity of Rimessa, the small village in which the patrol of Company I, 86th Mountain Infantry, had been ambushed on 15 January.

A second reconnaissance patrol sent out the afternoon of 24 January also observed enemy activity near Rimessa. Three enemy were seen.

On the basis of these reports the battalion commander started planning what was to be the unit's first combat mission—a raid on Rimessa scheduled for 26 January.

A platoon of heavy machine guns and a section of 81-mm mortars moved into Montefegatesi on the afternoon of 24 January in support of the A Company platoon. On this same afternoon, the battalion S-3 guided the regimental commander and regimental surgeon on an inspection trip over the entire Bagni di Lucca area. During this trip which covered eight miles, the narrow mountain road leading to Montefegatesi from Bagni di Lucca was reconnoitered, and plans were made to attempt to move vehicles over it although it was covered by three feet of snow in some places. Using personnel of the ammunition and pioneer platoon, the S-3 directed the attempt to open the Montefegatesi Road the following day. The road was opened, but was only passable to one-quarter and three-quarter ton vehicles. With this route open, the battalion commander immediately ordered the 75-mm pack howitzer platoon of headquarters company

to move to Montefegatesi and prepare for possible action in support of the forthcoming raid.

Final plans for the Rimessa raid were completed on 25 January, and one platoon of Company C moved to Montefegatesi in the afternoon in readiness. The weather was clear, and the battalion commander definitely ordered the raid to be conducted during the night and early morning of 26 January.

The raiding party consisted of four platoons and one section. Shortly before 2400 hours, 25 January, the lead platoon (from Company A) left Montefegatesi, followed an hour later by the rest of the force.

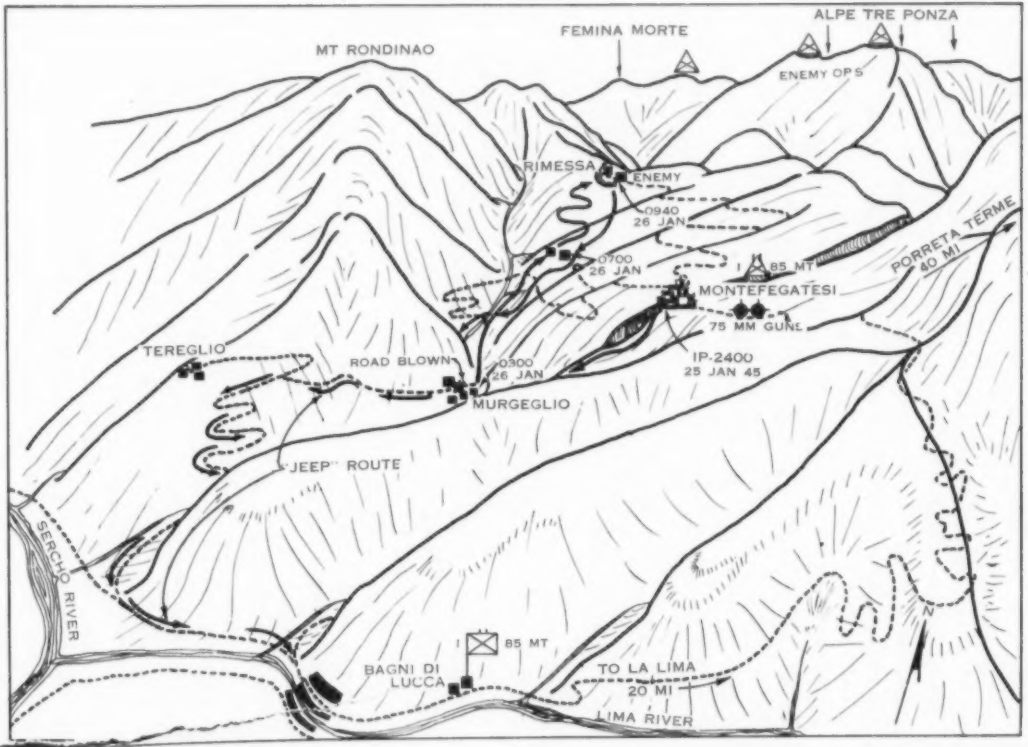
THE RIMESSA RAID, 26 JANUARY 1945

The little hamlet of Rimessa, the objective of the first battalion's initial combat raid, lay about four miles north of Montefegatesi, just at the base of the high peaks which generally marked the German front-line position.

Rimessa was well situated for an enemy outpost. It lay astride the Tereglio Road where that route ended and the only trail over the Solco Grande Pass began. It was at an elevation of approximately 3,700 feet. The only way that the raiding party could get to Rimessa was to descend into the Fegana River gorge, cross the stream at Murgeglio and climb up into the floor of the Fegana "bowl", and then on up to the objective, over very rough terrain covered by deep wet snow (see Map 2).

The special equipment with which the division was to have been equipped on its arrival in Italy had not been forthcoming. The raiding party, clad in O. D. wool uniforms, thin field jackets and regulation combat boots, followed the steep and icy trail from Montefegatesi down to Murgeglio, crossed the Fegana River and started the long climb toward Rimessa.

At about 0200 hours the weather suddenly changed. Clouds quickly covered the mountain and eventually dropped so low that the raiders were engulfed in the fog. Visibility was reduced to about 50 yards. At approximately 0300 hours, it began to sleet and within a short time all personnel in the raiding group were soaked to the skin and very cold.


ALPE TRE PONZA
FEMINA MORTE
MT RONDINAO
ENEMY OPS
RIMESSA
ENEMY
0940
26 JAN
0700
26 JAN
85 MT
MONTEFEGATESI
PORRETA TERME
40 MI
75 MM GUNS
TERECLIO
ROAD BLOWN
0300
26 JAN
IP-2400
25 JAN 45
MURGEGLIO
"JEEP" ROUTE
SERCHIO RIVER
85 MT
BAGNI DI
LUCCA
TO LA LIMA
20 MI
LIMA RIVER

Map 2.

The sleet soon softened the crust on top of the snow with the result that the men were soon wallowing in from 12 to 20 inches of wet slush which made footing precarious. The party pushed ahead, however, and at about 0700 hours reached a group of farm buildings. These houses were at first believed to be Rimessa and the two rifle platoons were immediately deployed. A thorough check of the area revealed that the objective was further on, and the little force reorganized and pushed forward. The Company A platoon led the advance, followed by the battalion headquarters group, the Company C platoon, and the heavy weapons bringing up the rear. The 81-mm mortar section had been laying assault wire from positions selected for the mortars about one mile above Murgeglio, but the wire ran out just as they reached the buildings. A man was left at this location with an SCR 536 radio to relay any fire orders which might be radioed to him. After a short rest the advance was resumed.

At about 0900 hours, the Company D officer requested permission from the battalion commander for his heavy weapons people to drop out of the column and take shelter in a nearby barn. The machine gunners were nearing exhaustion as they were carrying a large amount of ammunition in addition to the weapons. This permission was granted.

The morale of the men was so low at this point that it was with great difficulty that they were persuaded to move out again. The physical condition of the men was poor, as all of them were wet and chilled in addition to being at the end of their endurance. Visibility was reduced to about 30 yards by this time.

Ten minutes later, a machine gun suddenly opened fire on the column as it struggled over the top of a rise, and both of the lead scouts were hit. They fell on an open slope in full view of the enemy machine gunners who continued to fire at their bodies.

The moment firing broke out, a check by radio determined that Company C was some 500 yards to the left, and had not opened fire by mistake. Company C was ordered to move up

immediately to assist the Company A platoon in the assault on the enemy positions. The battalion commander also contacted Company D by radio and ordered the machine gun platoon up to the scene of action.

In the meantime, the Company A platoon had deployed and took up firing positions from which they could engage the enemy by fire.

The Germans, besides firing automatic weapons, were shooting rifle grenades at the American troops. These proved ineffective as they exploded deep in the snow.

The assault on Rimessa was delayed for 30 minutes while waiting for the Company C platoon to arrive. When it failed to reach the area at the end of the half hour, the battalion commander issued orders to close in on the enemy position and assault the buildings. One squad made up the maneuvering element, while the other two squads formed a base of fire.

Within ten minutes, these orders had been carried out and the platoon was successful in assaulting the German outpost. A machine-gun position was overrun, one gunner was killed and another captured.

During the process of checking all the buildings in the hamlet, three more enemy were discovered hiding in a cellar.

With Rimessa cleared of the enemy, all speed was made to give first aid to the two wounded scouts. They were carried into one of the buildings where one of the men died a few minutes later. He was the first man in the 85th Mountain Infantry Regiment to be killed in action.

A few minutes after all firing had stopped, the Company C platoon arrived and immediately was ordered to man a perimeter defense around the area. All personnel took a short rest before the return to Bagni di Lucca was started.

Using the SCR 300, the battalion commander contacted the advance base at Montefegatesi, told them of the success of the raid, and ordered that an attempt be made to move jeeps over the Tereglio Road. It was hoped that the light trucks of the battalion would be able to proceed far enough up this road to aid in evacuating the wounded man.

The commander of Company A started organizing a jeep convoy to attempt the trip over the Tereglio Road. He had made a partial reconnaissance of the route and knew the location of most of the bad places in the road. A crew of men equipped with picks and shovels constructed several emergency by-passes in a very short time.

The vehicles arrived at the advanced truck head by late afternoon and immediately started up the trail towards Rimessa with a detachment of fresh troops, the battalion surgeon, and a litter team, to evacuate the casualty.

The returning raiders, meanwhile, were experiencing very hard going. All personnel were so tired that when a man would slip and fall down on the icy trail, it was with great difficulty that he could be persuaded to get up again.

Much equipment was jettisoned along the trail. All the ammunition which had been packed up with the heavy weapons was cached under a large haystack and left for possible future use.

Finally, at about 2000 hours, all troops had reached Murgeglio and the battalion commander ordered a halt so the men could take shelter, build fires, and eat their "K" rations while waiting for the truck convoy to come back for them.

By having the trucks transport the men back to Bagni di Lucca, the battalion commander saved the troops from having to make the difficult climb from Murgeglio up to Montefegatesi.

The jeep convoy was back at Murgeglio by 2200 hours, 26 January, reinforced with all of the remaining one-quarter and three-quarter ton trucks in the battalion, and was able to carry all members of the raiding party from Murgeglio to Bagni di Lucca by 0100 hours, 27 January.

The entire operation had taken 25 hours.

The results of the operation were considered satisfactory despite the obvious errors which were committed during the raid. The main weakness, and one which quickly remedied itself, was the poor physical condition of all the personnel taking part in the operation.

In commenting on the operation later, the battalion commander said that he had gone on the patrol expressly for the purpose of watching some of his junior leaders and noncoms in action under actual combat conditions. "I knew that there was a tendency for troops in combat for the first time to fire a lot of ammunition at the enemy and then withdraw without putting into effect any of the basic principles of attack," he stated. "This is just what would have happened at Rimessa if I had not been nearby to enforce the fire and movement training we all had." The battalion commander also reported that discipline was poor during the operation, but felt that the terrible weather conditions encountered on the raid were partly responsible.

The four prisoners captured by the battalion were evacuated at the same time the wounded American was brought back and were immediately sent to regimental headquarters.

Within two hours, the regimental S-2 was able to phone the first battalion that the prisoners included two German mountaineers from the 232nd Fusilier Battalion, already known to be in the Abetone area, and two Italian Fascists from the 13th Company, 5th Regiment, San Marco Marine Division. The latter soldiers had only been in the line two days. The interrogation also revealed that between 18 and 20 other enemy had escaped from Rimessa in the fog, when they realized that a superior American force was attacking them.

The identification of troops from the San Marco Marine Division in the sector was a strong object lesson in applied combat intelligence in that this Fascist unit had not been reported in the Task Force 45 sector previously.

OPERATIONS, 27-29 JANUARY 1945

The day following the Rimessa raid was one of comparative rest for all personnel who had participated in the battalion's first combat venture. The rest of the unit, however, performed garrison duties. Company B, less the platoon on half-track patrol duty, was moved to Montefegatesi to take over the outpost and patrol duties at that

forward base. A heavy-machine gun platoon was moved to the same place. Some of the elements of Company C which had been outposting the villages of Monte di Villa Bugnano and Granaiola, relieved the Company B detachments at San Gemignano and Longoio.

The weather, which had continued rainy and cold through 27 January, cleared sufficiently on 28 January for the battalion observation post above Montefegatesi to operate again. Almost as soon as the observers started scanning the enemy area, they picked up the movement of a party of 19 enemy in the vicinity of Rimessa. These men were believed to be ones who had escaped the raid of 26 January.

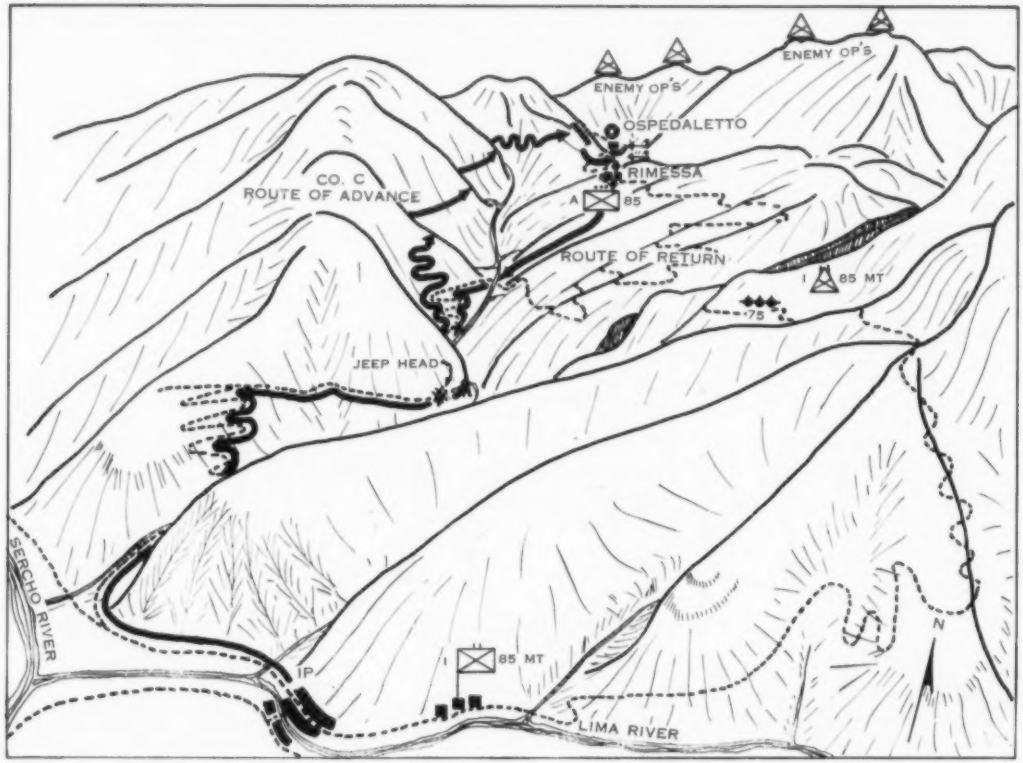
Shortly after the enemy detachment was first observed the battalion commander and S-3 arrived at Montefegatesi. Orders were immediately given the 75-mm howitzer platoon to fire on the enemy, but by the time the guns could be put into action, the enemy had disappeared behind a hill.

While making a reconnaissance farther up the ridge from the OP, the battalion S-3 discovered a location from which another building—in a deep ravine above Rimessa—could be seen. Around this building enemy activity was observed.

The howitzers were again alerted and fired several missions at the enemy house and personnel. The effects of this fire could not be accurately observed as the range was close to 8,000 yards. The name given the newly-located enemy position, according to maps of the area, was Ospedaletto—which means "shelter hut" in Italian. At least ten enemy were observed at this location.

The battalion observation post was ordered to move to the location from which the S-3 had picked up the new enemy target. It was hidden from observation from the first OP by a small ridge.

The fact that the enemy had another outpost near Rimessa spurred the battalion staff into planning another attack. A check with G-2 revealed that reasonably fair weather could be expected for several more days, and based on this report, the Ospedaletto attack was tentatively scheduled for 30 January. The "honor" of making the attack was


ENEMY OP'S
ENEMY OP'S
OSPEDALETTO
RIMESSA
A 85
CO. C
ROUTE OF ADVANCE
ROUTE OF RETURN
I 85 MT
75
JEEP HEAD
SERCHIO RIVER
IP
I 85 MT
LIMA RIVER
N

Map 3.

given to Company C, which had missed out on the action at Rimessa.

The preliminary plan of action, based on the experience gained in the Rimessa raid, called for Company C to climb to a knife ridge above the enemy position, build up a base of fire there, and then send an assault force in on the enemy outpost and clean it out. The plan called for supporting fires from the 75-mm platoon, and from one machine-gun platoon of Company D from positions near Rimessa. A platoon from Company A was to make a feint to draw the attention of the enemy while the attacking force got into position. (See Map 3.)

The IV Corps Engineers had been very cooperative in sending a detachment to put the Murgeglio-Tereglio Road into good condition. They reported that the route would be ready for heavy traffic as far as Murgeglio by 29 January, and that they would bridge a large blown-out area above Murgeglio as soon as possible. This meant that henceforth, troops would be saved the long climb down from Montefegatesi enroute to operations in the Rimessa Bowl.

It also meant that heavy weapons could be advanced much farther into the area, and that the ammunition supply problem for these weapons would be greatly eased.

On 28 January, the 10th Mountain Division headquarters opened at Campo Tizzoroa and all units of the division returned to parent control as of that date.

Troop dispositions for the Ospedaletto attack were as follows:

Company C: two rifle platoons, weapons platoon.

Company A: one rifle platoon to make a demonstration near Rimessa.

Company D: one machine-gun platoon, in position above Rimessa, to support the Company C effort by fire.

75-mm howitzer platoon: from positions at Montefegatesi, to fire on known enemy positions and observation posts.

At 2200 hours, 29 January, the attack force left Bagni di Lucca by truck for Murgeglio. From that point they climbed

directly to a trail which followed the contour around Monte Rondinaio and led directly toward the objective.

The weather was cold but clear.

THE OSPEDALETTO RAID, 30 JANUARY 1945

The battalion commander, the S-3, and S-2 arrived at the battalion observation post before dawn on 30 January prepared to observe the operations of Company C. A bright and sunny dawn gave promise of perfect weather for the attack.

As soon as it was light enough to see, all personnel at the OP manned the observation telescopes and field glasses and started to search for evidence of Company C, which was expected to be in position by this time on the ridge above the objective. No trace of the company could be observed in that area and a systematic visual search of the terrain leading up to the ridge was undertaken.

Within a few minutes, elements of Company C were observed trying to cross a very rugged canyon into which the path they had been following, led them. The plan to follow the trail around the flank of Monte Rondinaio had been based on a terrain study made the previous day through field glasses. What the glasses did not show, however, was the fact that the route of advance was extremely difficult. In three places the trail was so steep, and deeply covered by snow and ice, that foot holes had to be chopped before the men could cross. The movement over this route at night merely increased the difficulties many times.

Consequently, when morning came Company C was still some 1500 yards from the ridge they wanted to be on. To add to their difficulties, the trail suddenly petered out in a very steep and rugged canyon which was deeply drifted with snow. The snow, in turn, had a crust of ice over it three inches thick.

Chopping more footsteps in the ice, and aided by an improvised rope made by tying together the draw-strings from the men's field jackets, the company finally crossed the barrier and moved rapidly into the chosen area of departure. Four men were injured when they lost their footing crossing the ice slope and slid into a pile of rocks about 70 feet below.

Company C was in position to start the attack at 1010 hours.

In the meantime, the enemy had discovered the Company A platoon and the machine-gun positions near Rimessa and started firing mortar and artillery shells into the area. This fire was observed from the battalion OP, and the 75-mm platoon was immediately ordered to shell enemy observation posts along the summit ridges of Alpe tre Potenza and Femmina Morte. At the same time a radio message was sent to the platoon commander ordering him to get his attack started immediately and then get his men out of the Ospedaletto area as soon as possible, because of the danger from the enemy fires.

The Company C commander did not have to be told the danger of his position—directly under the enemy OPs—and quickly got his little force into action. Light machine guns, 60-mm mortars, and bazookas were used in addition to rifle fire, to cover the advance of the assault team on the enemy outpost.

The assault force got to within 200 yards of the Ospedaletto house before the enemy awoke to the danger. They immediately called for defensive fires from mortars and artillery which were emplaced north of the mountains, and these fires became so intense that the men—never before under artillery fire—literally froze in their tracks. However, the officer in charge of the small force got his section moving quickly, stormed a German machine-gun position capturing six prisoners and killing the resisting crew member, and executed a hasty maneuver to the rear.

At the time the assault was being pressed, the battalion's tiny artillery force of three 75-mm howitzers—using charge seven and firing at extreme elevation—were covering all known enemy OPs with fire. (So accurate was this shelling that the personnel in three of these positions were seen to flee.)

The Company D machine gunners above Rimessa also added their fires to that of the artillery, and gave overhead covering fire for Company C during its withdrawal from Ospedaletto.

Company C, joined by the assault force with their bag of prisoners, started back to the truck-head at Murgeglio. The attack had taken nearly five hours from the time that Company C went into position overlooking Ospedaletto.

The Company A platoon which had acted as the "decoy" in this operation, also returned to Murgeglio at this time, followed by the Company D platoon. All personnel were back in Bagni di Lucca before dark, 30 January, and the only casualties to any of our troops were the four Company C men who had fallen while crossing the canyon early in the morning.

The prisoners captured at Ospedaletto were all Italians and were later identified as being from the 12th Company, 5th Regiment, San Marco Marine Division. These prisoners revealed on interrogation, that on 28 January, the fire of the first battalion's 75-mm guns had caused the death of one officer and two men who had been on reconnaissance above Rimessa. They reported that concussion from shellbursts had blown these men off a cliff and they had fallen to their deaths.

The experience and lessons learned during the 26 January raid at Rimessa paid big dividends on this Company C operation, and resulted in much better cooperation in all echelons. One of the big lessons learned during the Ospedaletto attack was that there is no substitute for thorough ground reconnaissance.

OPERATIONS, 31 JANUARY—9 FEBRUARY 1945

For the 1st Battalion, 85th Mountain Infantry, as well as for the other units of the 10th Mountain Division, 31 January was a quiet day, with nothing more exciting than the usual reconnaissance and contact patrols in operation.

The 1st of February was a different sort of day for the first battalion, however, as the observation post—which had been moved still higher on the side of Monte Mosca—reported that a third enemy outpost could be observed nestling in the pass between the Borro al Fosso (a peak thrusting out from the northeast shoulder of Monte Rondinaio), and Femmina Morte. This new location was about 1000

yards northwest of Ospedaletto, and about 1000 feet higher in elevation. A number of enemy were observed digging positions nearby. (See Map 4.)

Careful study of aerial strip mosaic photos taken expressly for the use of the battalion was undertaken, and two plans were formulated. The first was to follow the ridge from Montefegatesi up over Monte Mosca, then climb to the Alpe tre Potenza Massif, and sweep around to the northeast of it and pick up all the enemy reported at the ski resort of Abetone.

This plan was abandoned in favor of the alternate which called for circling behind Monte Rondinaio to the northwest and then sweeping down through the pass where the latest enemy outpost position had been located.

This second plan was favored because it avoided exposing a flank of the raiding party to the enemy artillery known to be in the Passo di Abetone area.

During the next few days, therefore, preparations were made for this raid. A large force was to be employed, including the use of the "Alpini" pack mule company to aid the heavy weapons crews in traversing the difficult terrain expected.

No ground reconnaissance was made for this projected raid despite the fact that the two previous efforts by the battalion had suffered because of lack of previous ground reconnaissance.

The result was that on 5 February, after the two-company raid had started out, the entire plan had to be abandoned when it was found that the northwest side of Monte Rondinaio was impassable to troops not equipped with special mountain equipment. The troops returned to Bagni di Lucca after ten hours of climbing through deep snow.

The battalion suffered one casualty on this ill-fated expedition. This happened when the officer who had been sent out with a squad of picked snipers, got lost and led his men to a peak 1500 yards from the one he was supposed to have gone to. One of the men in the main raiding group mistook him for an enemy sniper and, at a range of about 800

yards, shot him through the right thigh. The officer was successfully evacuated after a long and very difficult effort.

The 6th of February was another quiet day.

On 7 February the battalion S-3 went up to the battalion observation post and made a careful terrain study of the Borro al Fosso area. After additional study of a new set of aerial photos of the same area he became convinced that a raid would have a good chance of success if dispatched over a different route. He presented a tentative plan for this operation to the battalion commander.

The S-3's plan was to send an officer and about 10 men, including a radio operator, to make a ground reconnaissance of the Borro al Fosso Massif and find out if it would be possible to send a large body of men up and over it so that an enveloping force could hit the enemy outpost in the pass from the rear.

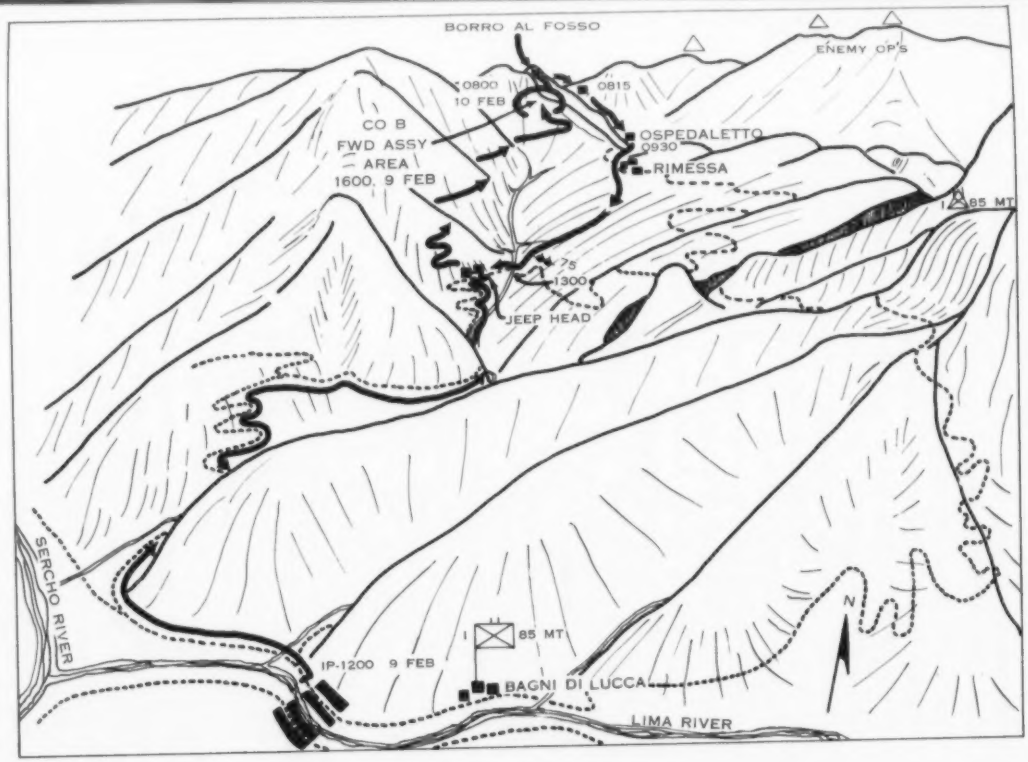
Should the reconnaissance show that the plan would work, a two-day expedition would be sent out to undertake the mission of hitting the enemy where he least expected it. The first day the patrol would only move as far as a thick pine wood located just at timberline and directly below the main ridge leading up to the summit of Borro al Fosso. There they would bivouac for the night, move out before dawn the next morning, climb over the peak, and envelop the enemy before full daylight.

The battalion commander agreed to give the plan a try, and shortly before noon on 8 February, the patrol moved out accompanied by one full rifle squad and a radio operator.

The patrol worked its way over the same trail that Company C had followed in its operation on 30 January and without too much difficulty, reached the proposed assembly area in the pine woods by 1500 hours.

The battalion S-3 at the observation post above Montefegatesi, was in contact with the patrol via SCR 300 and by use of a telescope, was able to assist the patrol leader in his choice of routes by directing him around obstacles.

The reconnaissance patrol determined that the woods would make an excellent combination bivouac and assembly area. The patrol leader decided to check conditions higher


BORRO AL FOSSO
ENEMY OP'S
0800
10 FEB
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CO B
FWD ASSY
AREA
1600, 9 FEB
OSPEDALETTO
0930
RIMESSA
85 MT
75
1300
JEEP HEAD
SERCHIO RIVER
85 MT
IP-1200 9 FEB
BAGNI DI LUCCA
LIMA RIVER
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Map 4.

on the mountain and with three other men started up the main ridge to the summit. As he approached to within about 400 yards of the military crest, after clambering up tne icy slopes, the observers at the battalion OP were electrified into sudden action by the sight of an enemy patrol moving directly towards the patrol along the summit ridge of the same Borro al Fosso.

The patrol leader had left his radioman below under cover of woods and the S-3 therefore, had no way of warning him of the danger above him.

The next thing that the operations officer thought of was to fire a few rounds from the 75-mm howitzers in the general direction of Monte Rondinaio in hopes that the shelling would scare the enemy patrol back to its base.

The howitzer platoon was alerted and within a very few moments had the first round "on the way." Unfortunately, as the guns were cold, the first shot was erratic and instead of bursting to the left of, and beyond the enemy, it hit within 75 yards of the patrol.

The next few rounds were more accurate, however, and landed where they were supposed to. The firing was so good that later information obtained from prisoners revealed that one member of the enemy patrol was killed by it.

Unfortunately, the firing also changed the patrol leader's mind about climbing to the summit. He had gone far enough so that he knew that the plan was feasible, however, and returned to Bagni di Lucca with much valuable information on the terrain.

According to plans approved by the battalion commander, the personnel on this combat patrol were to come from Company B as this company had not yet participated in a fire fight with the enemy. Two officers and 81 men were alerted and were soon prepared to leave on the forenoon of 9 February. This force consisted of a rifle platoon, elements of the weapons platoon, a section of 81-mm mortars, and a medical team.

Once again the weather turned against the battalion. Shortly after dark, 9 February, clouds rolled over the

mountains and it soon began to sleet. The sleet changed to wet snow within an hour, but not soon enough to keep the poorly-equipped patrol force from being thoroughly drenched. It was here that mountain training stood these men in good stead. They hastily chopped down a number of fir trees, used the branches to make crude lean-to shelters which they could completely cover with snow, and were able to kindle small fires inside that were not visible from the outside. Had it not been for this expedient, the men would have had to return to Bagni di Lucca, or freeze to death.

The bad weather blew away before morning, however, after depositing about 18 inches of fresh snow all over the mountains.

Back at Montefegatesi the battalion commander and the S-3 were at the observation post before daylight and expected to see the little force perched on top of Borro al Fosso ready to attack. Such was not the case, however. Because of the new fall of snow, the Company B patrol had extreme difficulty in climbing up the main ridge to the summit of the mountain. Lack of climbing equipment, such as ice axes and ropes, once again hampered operations.

The patrol reached the summit by 0800 hours, however, and within 15 minutes swooped down on the unprotected rear of "the enemy occupied house" and cleaned out the place. The bag of prisoners this time totalled 11, with one man killed trying to get away over the snow. In addition, three Model 42 machine guns, three Luger pistols and many other items of equipment were collected by the Company B men.

Before leaving the house, the patrol leader had his men burn the place. Then, collecting the remainder of his men from their firing positions on the mountain above, the patrol leader returned to Bagni di Lucca by way of Ospedaletto, which they also tried to burn, and Rimessa. The Company B patrol was back at the base by mid-afternoon.

The 11 prisoners captured were partly Germans of the crack 4th Mountain Battalion, and partly Italian Fascists of the San Marco Marine Division.

FINAL OPERATION, 11-12 FEBRUARY, 1945

The raid on 10 February ended all combat operations in the Bagni di Lucca—Abetone sector for the 1st Battalion, 85th Mountain Infantry. The 10th Mountain Division had already been alerted to make its first major attack as a division on 19 February, at Monte Belvedere, and all battalions were shuffled around so that each got a chance to make one or two practice night attacks up a mountain which resembled Monte Belvedere.

The 1st Battalion, 85th Mountain Infantry, took part in one of these rehearsals on 12 February, and on the 14th of the month started moving elements of the battalion into the Lizzano-Belvedere sector. On 16 February the 473rd Regimental Combat Team's 1st Battalion relieved the battalion in the Bagni di Lucca sector.

ANALYSIS AND CRITICISM

A careful analysis of the operations of the 1st Battalion, 85th Mountain Infantry, during the three-week period in the Bagni di Lucca sector reveals that while no definite attack mission had been given this unit, it still operated with enough aggression to push the enemy back more than five miles, killing seven and capturing 21. The first battalion during these operations, lost one man killed, one man wounded by the enemy, four men injured, and one officer wounded by accident.

The subject unit also received its baptism of fire while in the lines and profited by its experience to a marked extent as is shown by its subsequent combat record.

The fact that the battalion had three weeks in a combat zone in which to operate without being committed in a major attack, gave officers and men plenty of opportunity to put to the supreme test all the basic principles which they had learned during their training prior to combat.

Some of the actions of the battalion, its staff, and of higher echelons of command which bear criticism include:

1. Plans for the first combat patrol were too ambitious in view of the poor physical condition of all personnel.

2. Failure of the battalion and subordinate commanders to make adequate ground reconnaissance before executing the first two raids.

3. Failure of the battalion staff to work out a plan of liaison with the band of Italian partisans in their sector, with the result that the battalion did not benefit from their knowledge concerning the mountains in which the unit was operating.

4. Failure of higher echelons to provide the special items of equipment and clothing which the mountain division had been trained to use.

The success of the 1st Battalion, 85th Mountain Infantry, in its initial combat operations is attributable mainly to the leadership and ability of junior officers and noncommissioned officers.

The fire of the 75-mm pack howitzers proved to be so effective that in subsequent operations they played a major part in every attack plan.

All personnel of the battalion learned to have confidence in the infantry weapons. The only weapon which did not prove to be consistently effective was the rocket launcher, and the reason for its failure was the fact that the rockets would not detonate in snow. The submachine gun was one of the most popular automatic weapons.

LESSONS LEARNED

Some of the lessons learned from this operation are:

1. Mountainous terrain presents few insurmountable obstacles to military operations *if the troops are properly equipped, clothed, supplied, and trained.*

2. In mountain combat the commander is limited by the terrain as to the means which he may employ. Success in mountain combat depends more upon proper adaptation of the available means to the terrain than it does upon relative firepower of weapons.

3. Maneuver of small units and the initiative and leadership of subordinate commanders are of the highest importance in mountain warfare.

4. When formulating plans for operations, the possibility of sudden changes in the weather must be considered.

5. Physical hardening of personnel entering mountain combat is a prime essential.

6. Special training and equipment are essential for success in mountain warfare.

7. The 75-mm pack howitzer is an ideal weapon for mountainous terrain because of its high angle of fire.

8. Weapons function better in extreme cold if they are kept dry of oil.

9. The SCR 300 radio is an ideal means of communication in mountain terrain where line of sight conditions prevail.

10. Machine-gun units seldom find fields of fire which permit them to utilize full grazing effect.

Emergency Transport by Bombers

On 11 August 1945, the 11th Airborne Division was conducting refresher training in a rest area on Luzon preparatory to taking part in the forthcoming assault on the Japanese home islands. At 0530 in the morning an urgent message was received to the effect that the entire division would move by air at once to Okinawa. Four days later the entire division (less rear echelon) had completed the 1100 mile trip and was staging at Okinawa for a second air shuttle to Atsugi Airfield in Tokyo.

Just how was that gigantic air shuttle arranged in a theater of operations where every airplane was constantly being utilized to the maximum? The solution, although not to be found in the field manuals, was comparatively simple. When a computation of the cargo type airplanes disclosed that an insufficient number were available, B-24 bombers were diverted from other missions and utilized for transporting troops. Altogether, 99 lifts were made by the heavy bombers utilizing the bomb bays, cargo compartments, and, generally, any space available to carry a combat equipped soldier.

Obviously such a solution is not ideal, but it does deserve consideration in the event of future necessity. To this and certain experiments and tests were conducted by the Airborne Command prior to its inactivation and by the Boeing Aircraft Corporation, manufacturer of the B-29, to determine the adaptability of the B-29 to transport of troops and equipment. In addition, a Guam based unit of the 20th Air Force equipped with B-29's made independent tests to determine the troop carrying capacity of the Superfortress.

Other tests of this nature were conducted by The Airborne School (now the Airborne Section, The Infantry School), incorporating the results of previous experiments

with a knowledge of the requirements of air-landed troops. The first reports indicated that the B-29 is a highly specialized aircraft, built solely for heavy bombardment, consequently difficult to convert into a troop carrier. However, by sacrificing comfort of the individual and making minor disassembly of aircraft equipment, certain seating plans have been devised which proved satisfactory in flight tests. Troop efficiency must also be sacrificed to the extent that some items of troop equipment must be disassembled prior to loading.

Generally speaking, it can be said that any bomber, unmodified for troop and cargo use, is not an easy piece of equipment to convert into a transport. The confines of the bomb bays, the only cargo compartments, are such that the loading of most bulky items, if at all possible, is extremely difficult. This is particularly true of the B-29 as its extreme range necessitates the installation of innumerable pieces of extra equipment, each imposing additional limitations on the cargo and troop carrying space. The aircraft itself is built so close to the ground that loading equipment in its bomb bays is very difficult. So difficult, in fact, that many wheeled items must be run down into a long trench from four to five feet deep and eight feet wide over which the ship is taxied and stopped when its bomb bays are overhead. This increases the average distance from the bomb bays to the ground from 46 inches to 106 inches and greatly facilitates loading.

The two bomb bays themselves are rectangular in shape, being 138 inches long, 60 inches wide, and 62 inches in height. Equipment may be dismantled and manually lifted into the bays, then lashed to the bomb racks. Equipment that will fit into the confines of the bay without disassembly may be placed under the bay and pulled up into it by means of four bomb hoists installed one to each corner of the bay, and operated either electrically or manually. The cables from these hoists may be let down to the cargo, fastened to it, and all four hoists then operated together to lift the cargo up into position. The maximum weight being so lifted is 16,000 pounds. Platforms may be constructed for each bomb bay to act either as fixed flooring for troops

being carried in the bays, or as flooring that can be lifted, as in an elevator, by the hoists or cables running to each corner of the platform. Generally, the platform cannot be constructed to carry more than 7,000 pounds without making it so heavy that it will take up valuable weight where useful equipment might be carried.

It was found through experiment that each bomb bay could carry, without modification, a ¼-ton truck, ¼-ton trailer, a small tractor with dozer blade, or 17 men; these all being carried on the platform or in the case of the vehicles, lifted into place with the hoists and lashed to the bomb racks with rope and supported by planks placed across the bays.

The 105-mm howitzer must be partially disassembled and then may be lifted and lashed piece by piece to the bomb racks or lashed to the cargo platform and lifted into the bomb bay.

For carrying personnel equipped with combat loads and parachutes, the unmodified aircraft with full armament is capable of lifting its crew of pilot, co-pilot, flight engineer, navigator and radio operator, all occupying their usual seats, plus 81 men in the following positions: (See Figure 1.)

NUMBER OF MEN	*LOCATION IN BOMBER*
1	Bombadier's seat
3	Pilot's compartment
3	Forward pressurized compartment
6	Pressure tube (prone)
17	Forward bomb bay
6	Right and left catwalk of forward bomb bay (sitting)
3	Top of center wing area (prone)
17	Rear bomb bay
6	Right and left catwalk of rear bomb bay (sitting)
2	Left and right rear gun blisters
1	Top rear blister
16	Rear pressurized compartment
81	

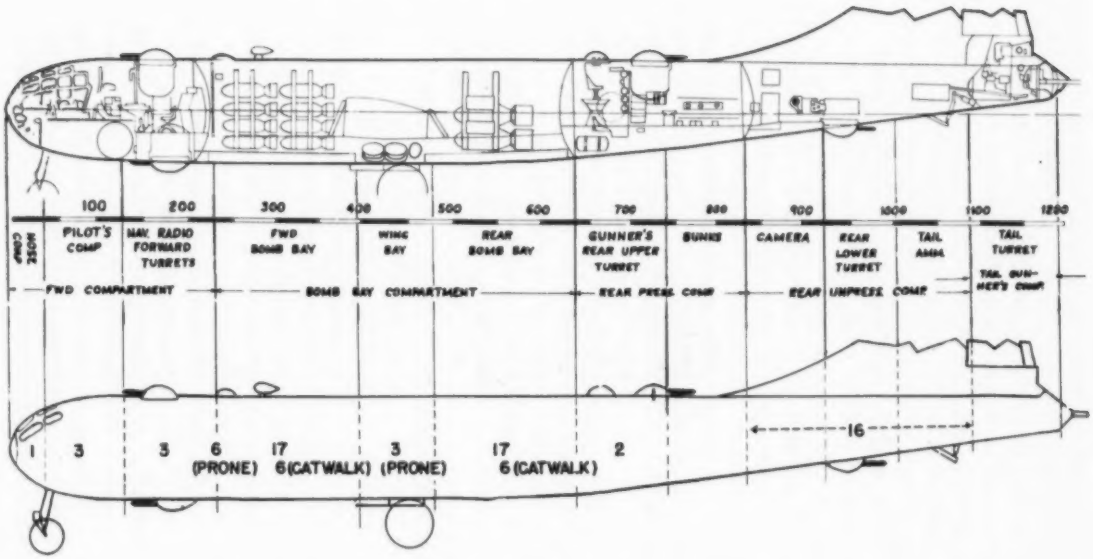

Figure 1. In case of necessity, 80 men with combat equipment can be transported in a B-29 bomber.

This method of loading makes for very cramped quarters for many men and should be used only in an emergency when time does not permit modification.

If the plane is modified by removing guns and turrets and constructing a seat per man, a total of five crew members as before and only 69 men equipped with combat loads and parachutes, may be carried. This arrangement provides for more comfortable seating but decreases the load capacity.

NUMBER OF MEN	*LOCATION IN BOMBER*
1	Bombadier's seat
1	Pilot's compartment
4	Around top front turret position (seated)
22	On forward bomb bay flooring and right and left catwalks (seated)
1	Navigator's astrodome
22	On rear bomb bay flooring and right and left catwalks (seated)
11	Rear pressurized compartment
1	Tail gunner's compartment
6	Rear unpressurized compartment
69	

Such arms as the 75-mm pack howitzer, 57-mm and 75-mm rifles are all easily placed in the bomb bays but will displace personnel. These basic loads could all be transported 1000 miles. If this distance is to be increased, the cargo and personnel loads must be correspondingly decreased.

The B-29 is capable of carrying 35,410 pounds of equipment for 700 miles, 34,400 pounds for 1500 miles, or 20,090 pounds for 3000 miles; all at the altitude of 5000 feet. For altitudes above 10,000 feet where oxygen is needed, the number of personnel being flown must be reduced approximately 30%, since the bomb bays are unpressurized as is the rear unpressurized compartment. An additional limitation is imposed by the fact that the six troop positions in the pressure tube that runs from the forward pressurized

compartment to the rear pressurized compartment is, because of its size, untenable for a flight of more than three hours duration.

Means of emergency escape are limited and parachuting would generally be successful only with well disciplined troops trained in procedure.

The aerial supply of an air transported unit may well be accomplished by the B-29, either by dropping aerial delivery containers from the bomb racks or by lashing equipment to it and dropping the entire assembly, platform and all.

Generally, it can be assumed that the transport of combat troops and their essential equipment in any modern bombing craft is feasible but necessitates preliminary training of the troops concerned and general briefing of the pilots. Before decision is made to utilize these planes for this purpose, however, many other factors will be taken into account. Discounting tactical and strategical considerations which might make it uneconomical to use bombers for this purpose, there remains the fact that there are only comparatively few airfields in existance that can support heavily loaded bombardment craft in take-off and landing. The B-29 for example, requires a field 6,250 feet in length and capable of supporting 70 tons for take-off and 3,150 feet in length and capable of supporting 60 tons for landing.

It is obvious that a B-29, loaded to its maximum with troops and equipment and flying at its economical altitude of 5000 feet, would be a choice target for both fighter aircraft and antiaircraft artillery. Consequently, to man the defense weapons of the bomber would necessitate a reduction in cargo and personnel. For apparent reasons the use of B-29's over hostile territory where enemy action is a possibility is not contemplated.

It may be that no unit commander will ever face the task of moving his troops by B-29's or other bombing craft, but if ever that day should come, the preliminary plans have been laid. In case of necessity, the B-29 or a similar bomber can be used to move a unit by air a distance of 3,000 miles and set it down with sufficient equipment to do its job.